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Final Environmental Impact Statement for Central Hillsborough County-Tampa, Florida Wastewater Facilities

(U.S.) Environmental Protection Agency
Atlanta, GA

Aug 82

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This Final EIS addresses proposed wastewater facilities for the City of Tampa, the City of Temple Terrace and portions of adjacent unincorporated Hillsborough County. Wastewater management alternatives have been evaluated with particular attention to the impacts of alternative management systems on growth patterns and primary and secondary impacts on wetlands and other area water resources.

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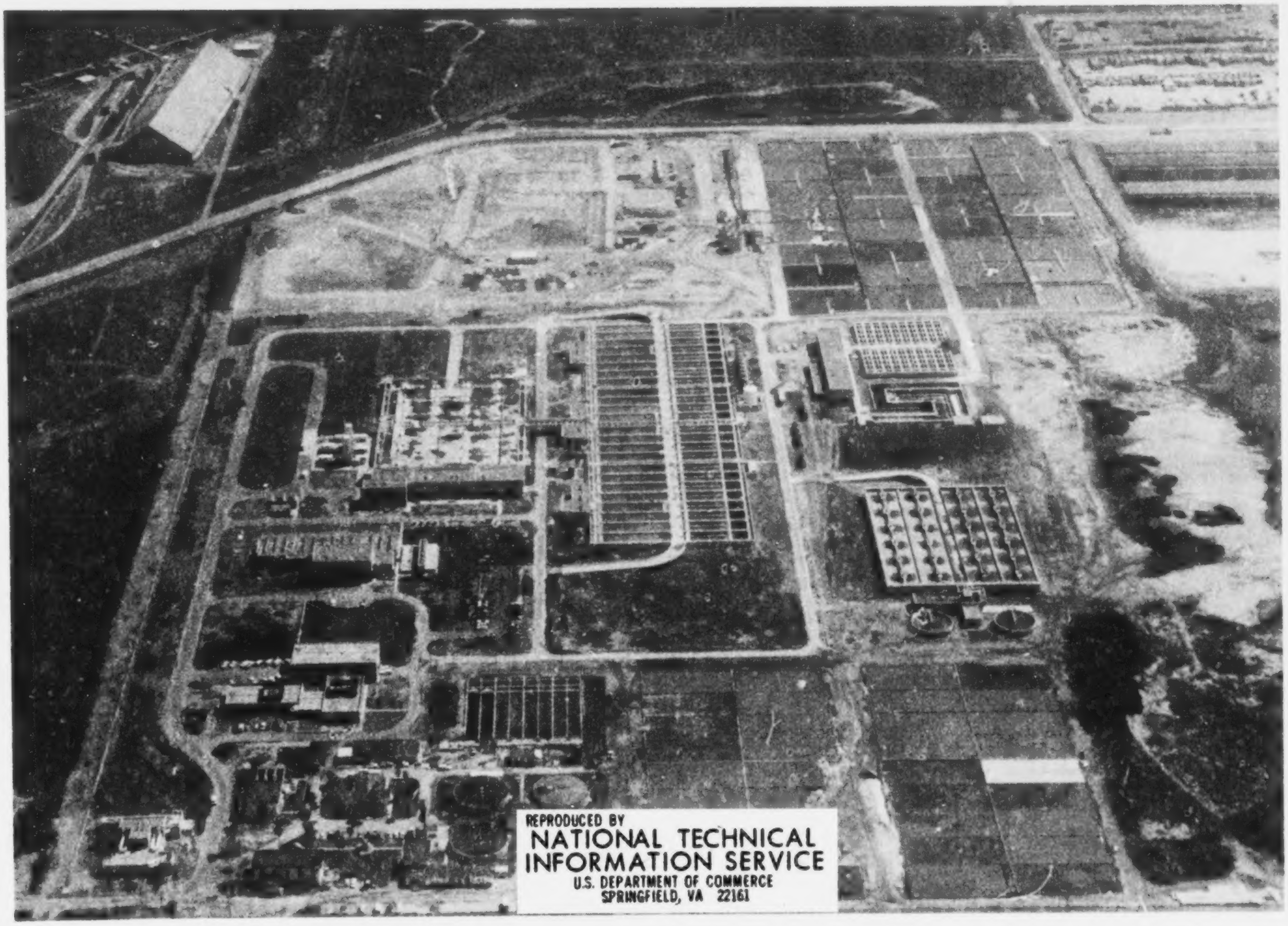
EPA

Environmental Impact Statement

Final

Central Hillsborough County - Tampa Area, Florida



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Final
Environmental Impact Statement

for

Central Hillsborough County-Tampa, Florida
Wastewater Facilities

Prepared by

U.S. Environmental Protection Agency
Region IV
Atlanta, Georgia 30365

This Final EIS addresses proposed wastewater facilities for the City of Tampa, the City of Temple Terrace and portions of adjacent unincorporated Hillsborough County. Wastewater management alternatives have been evaluated with particular attention to the impacts of alternative management systems on growth patterns and primary and secondary impacts on wetlands and other area water resources.

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Approved by

Charles R. Jeter
Regional Administrator

6/16/82
Date

Executive Summary
for
Environmental Impact Statement
Central Hillsborough County
Tampa Area, Florida
Wastewater Facilities

( ) Draft

(X) Final

U.S. Environmental Protection Agency
345 Courtland Street, N.E.
Atlanta, Georgia 30365

1. TYPE OF ACTION: Administrative (X) Legislative ( )

2. DESCRIPTION OF ACTION:

A. PURPOSE OF THE EIS AND BACKGROUND

The Central Hillsborough County - Tampa 201 Facility Planning Area Environmental Impact Statement is being prepared to address the provision of wastewater management facilities for a portion of Hillsborough County and the Cities of Tampa and Temple Terrace, Florida. Sewerage facilities which currently service the Planning Area are provided through either privately-owned franchises or through utilities owned and operated by Hillsborough County, the City of Tampa or the

City of Temple Terrace. In general, the existing wastewater management system is incapable of meeting future needs without serious degradation of the environment.

The Central Hillsborough County - Tampa 201 Facility Planning Area (Planning Area) is located on the central west coast of Florida. The boundaries of the Planning Area were established by the Florida Department of Environmental Regulation. The Planning Area was divided into the County Service Area and the Tampa Service Area for planning purposes. The City of Tampa was responsible for planning within the Tampa Service Area which includes the City of Tampa, the City of Temple Terrace, and the area defined by a 1967 agreement between the City and County and referred to as the Original Intergovernmental Agreement Area or OIGAA. Planning in the remainder of the Planning Area was the responsibility of Hillsborough County.

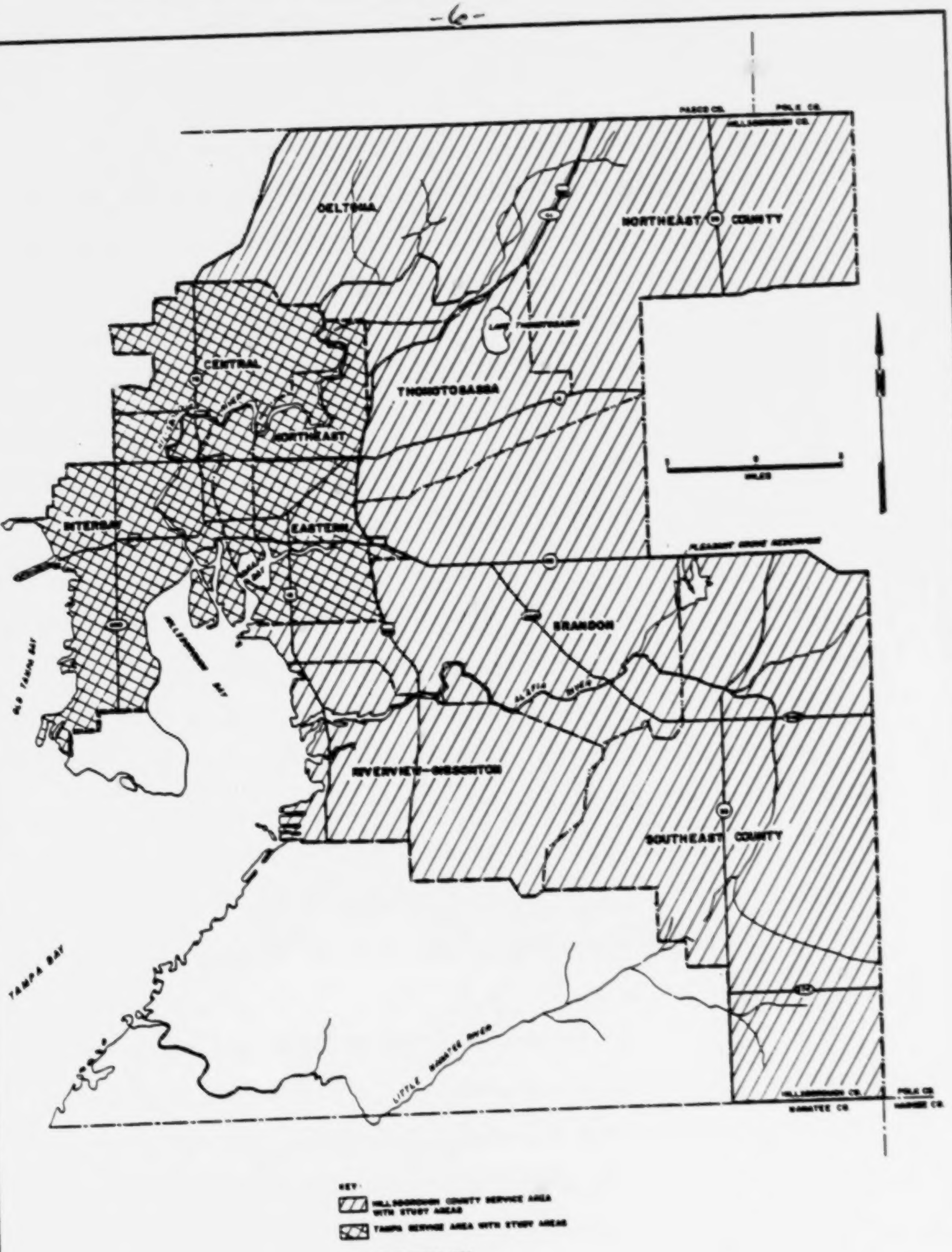
The service areas were further divided into study areas to facilitate planning for future wastewater collection, treatment and disposal needs, as shown on Figure 1. Study areas were established based on consideration of existing wastewater facilities, topography, future land use, census tracts and political boundaries. Additionally, study areas were subdivided into sewer districts to identify needs for sewer service.

The major population centers within the Planning Area are the Cities of Tampa and Temple Terrace, both located within the Tampa Service Area (TSA). The 1978 population estimate for the TSA is 396,929 people. Approximately sixty percent of the TSA is presently sewered. However, portions of this system are undersized for the current wastewater flows and others are no longer serviceable due to structural deterioration. Wastewater is treated at the City of Tampa's treatment facilities located at Hookers Point. This facility provides advanced wastewater treatment with the treated effluent discharged into Hillsborough Bay.

The County Service Area (CSA) is sparsely populated with the exception of the Brandon and Riverview-Gibsonton areas. Septic tanks and package treatment plants have been used extensively to provide wastewater areas. The CSA contains a total of 80 package treatment plants. Portions of the Brandon area are served by a wastewater collection system and owned and operated by Hillsborough County. Wastewater collected by this system is conveyed to the City of Tampa's Hookers Point treatment facility.

The Clean Water Act of 1977, represents the major legislative action for water pollution abatement in the United States. Under this legislation the U.S. Environmental Protection Agency has been given responsibility for the administration of the law including the funding of wastewater facilities.

The principal mechanism in P.L. 95-217 which provides for the construction of municipal wastewater treatment plants is


PASCO CO.
POLK CO.
HILLSBOROUGH CO.
DELTONA
NORTHEAST COUNTY
LAKE THONOTOSASSA
CENTRAL
THONOTOSASSA
NORTHEAST
MILES
INTERBAY
EASTERN
PLEASANT GROVE RESERVOIR
BRANDON
OLD TAMPA BAY
HILLSBOROUGH BAY
ALAFIA RIVER
RIVERVIEW-GIBSONTON
SOUTHEAST COUNTY
TAMPA BAY
LITTLE MANATEE RIVER
HILLSBOROUGH CO.
MANATEE CO.
POLK CO.
HARDEE CO.
KEY:
HILLSBOROUGH COUNTY SERVICE AREA WITH STUDY AREAS
TAMPA SERVICE AREA WITH STUDY AREAS
201 PLANNING AREA

SOURCE: GREELEY AND HANSEN, SMITH AND GILLESPIE, 1979

CENTRAL HILLSBOROUGH COUNTY - TAMPA
201 FACILITY PLAN
ENVIRONMENTAL REPORT
EPA No. C120834010

HILLSBOROUGH COUNTY AND CITY OF TAMPA SERVICE AREAS AND STUDY AREAS IN THE CENTRAL HILLSBOROUGH COUNTY - TAMPA 201 FACILITY PLANNING AREA

FIGURE 1

Section 201. This Section provides grant funds for the planning, design and construction of wastewater facilities. Under the provision of Section 201 any wastewater facility which is newly proposed or under consideration for upgrading and or expanding which will use federal funds for construction must first proceed with a 201 Facilities Planning Study.

In 1978, EPA granted Step 1 funding for preparation of the Central Hillsborough County - Tampa Area 201 Facilities Plan. The City of Tampa and Hillsborough County have been coordinating the 201 Facilities Plan for the study area. Smith & Gillespie Engineers, Inc. of Jacksonville, Florida and Greeley & Hansen of Tampa, Florida were granted approval to begin preparation of the 201 Facilities Plan in October, 1978.

Due to the environmental complexities in the study area and the financial and management constraints of the applicants, EPA made the decision to prepare an EIS in conjunction with the 201 Facilities Plan. Dames & Moore was authorized to begin preparation of the EIS in March, 1979.

The objective of the EIS and 201 Facilities Plan process is the selection of the most cost-effective, environmentally sound, socially acceptable and implementable wastewater management system for the Planning Area. To meet this objective, certain major goals were determined to be significant:

1. To upgrade or replace deficient treatment and septic systems.

2. To minimize the adverse effects of the disposal of large volumes of wastewater.
3. To maximize the benefits of wastewater reuse.
4. To assist land planners in determining environmentally sensitive areas which should be protected from future development.

Public participation was encouraged throughout the 201 planning process through the establishment of a Citizens Advisory Committee, public meetings, and local news coverage. The Advisory Committee included representatives of all local governments, environmental groups, regional regulatory and planning agencies and private citizens. Meetings of the Advisory Committee were held at key intervals in the planning process and committee members were provided with a series of study memorandums which presented detailed information on principal parts of the study. Following the selection of a recommended plan, a public meeting was held to afford interested citizens an opportunity to comment on the plan.

B. 201 Facilities Plan Summary

The 201 Facilities Plan was developed by Smith & Gillespie Engineers, Inc. of Jacksonville, Florida and Greeley & Hansen of Tampa, Florida. The final portions of the 201 Facilities Plan were completed in April, 1982.

The purpose of the 201 Facilities Plan was to provide a wastewater management plan for the collection, treatment and disposal of estimated wastewater quantities from the Planning Area through the year 2000. Alternative projects were developed to satisfy the projected wastewater collection, treatment and disposal needs. The alternatives were compared with respect to economic, environmental, administration and implementation characteristics.

During the 201 planning process, specific wastewater management problems were identified in the Tampa and County Service Areas. Solution of these problems was one of the major goals of the 201 Facility Plan. The major problem within the Planning Area is the quality of surface waters in the area. Several water quality standards violations have been cited by regulatory agencies in the area. Over-enrichment of area surface waters from fertilizers and from human and animal wastes have been assessed by the Tampa Bay Regional Planning Council as the most significant water quality problem. Some wastewater treatment plants, animal wastes and various other sources have contributed to excessive quantities of coliform bacteria found in some area waters, over-enrichment of surface waters and low concentrations of dissolved oxygen.

Specific problems within each service area are identified in the following sections.

Tampa Service Area (TSA)

Over one-half of the TSA is serviced by an existing wastewater collection and transmission system. However, the system requires substantial improvements to provide hydraulic relief for overloaded sewers and to correct structural deterioration of sewers that are no longer serviceable or where hydrogen sulfide attack has occurred. Projects now under construction or planned as part of Tampa's Fourth Wastewater Improvement Program (4-WIP) will provide the hydraulic relief necessary in some existing sewers through flow diversion. Other existing sewers will require relief by replacement or parallel pipelines. Sewers with structural deficiencies will generally require replacement.

The hydraulic and structural deficiencies in the existing collection system have resulted in overflows into the Hillsborough River, streets, drainage canals and some bay waters. Additionally, disruptions in service and some local flooding has occurred. These deficiencies cause the periodic release of untreated wastewater from the collection system and, therefore, significantly compromise the effective operation of the system.

Areas available for further development within the TSA are generally unsuited for the use of septic tanks for wastewater disposal due to soils with low permeability, high water table or location within a floodplain. One potential area of future development is the Hillsborough River floodplain upstream of the City of Tampa water supply intake. The possible malfunctioning of septic tank systems in this area pose a potential threat to Tampa's water supply.

County Service Area (CSA)

The northern and southeastern portions of the County Service Area are sparsely populated and wastewater is disposed through the use of septic tank and drainfield systems. However, the central and southern portions of the CSA in the Brandon and Riverview-Gibsonton areas are more developed. Wastewater in these areas are treated and disposed through the use of septic systems or package treatment plants. Portions of the Brandon area are served by a sewer system owned by the County. This system conveys wastewater to the City of Tampa for treatment.

The Brandon Sewer System includes an extensive system of manifold force mains and numerous pumping stations as a result of rapid population growth in the area. This system is approaching its design capacity and further expansion could result in major operational problems.

Package treatment plants have been used extensively for commercial establishments, apartment complexes, schools and some subdivisions. Presently, there are 80 package treatment plants within the CSA. The majority of these facilities consist of extended aeration treatment plants and percolation ponds for effluent disposal.

The operational history of many of the package treatment plants is not good. This, combined with the large number of plants and the density of septic tanks has resulted in scattered local contamination of ground water and surface water in the Brandon and Riverview-Gibsonton areas. Analysis of water samples from the Brandon municipal water supply well field indicates slightly elevated nitrate concentrations which may be attributed to septic tanks in the area, as well as percolation ponds and non-point source runoff. The continued use of septic systems in the Riverview-Gibsonton area was not considered feasible because of the unsuitability of the soils in this area.

3. ALTERNATIVES CONSIDERED

The following alternatives were considered to adequately assess the different portion of the planning area and provide for a comprehensive plan.

Alternative Wastewater Service Configurations

The Planning Area was divided into two service areas, the Tampa Service Area (TSA) and the County Service Area (CSA) for the 201 Facilities Planning process. The service areas were further broken down into study areas.

Portions of the TSA are currently served by wastewater collection and treatment facilities. In 1951, the City of Tampa began construction of a 36 mgd primary treatment plant at Hookers Point. Recently, the Hookers Point treatment plant was upgraded to provide advanced wastewater treatment at a rated annual average hydraulic capacity of 60 mgd. This capacity was considered sufficient to meet projected wastewater needs until the late-1980's.

Because of the existing collection and treatment facilities within the TSA, no other service configurations were developed for the TSA.

Service configurations for collection and treatment of wastewater were developed for four of the six study areas within the CSA. The study areas included were the Deltona, Thonotosassa, Brandon and Riverview-Gibsonton Study Areas. The Northeast County and Southeast County Study Areas were not included in the development of service configurations because of: existing low population density; lack of wastewater management problems; and, projected low population density.

Two service configurations were developed for the Deltona and Thonotosassa Study Areas: collect and treat wastewater within the respective study areas; and, collect and pump wastewater from each study area to the TSA for treatment at the Hookers Point treatment facility. In addition to these two service configurations, a third configuration was developed for the Brandon and Riverview-Gibsonton Study Areas: treat a portion or all of the study area's wastewater within the study area and convey the remainder to the TSA for treatment. A fourth configuration was developed for the Riverview-Gibsonton Study Area which included pumping of wastewater to treatment and disposal facilities in the Hillsborough County South 201 Planning Area.

Alternative Treatment and Disposal Methods

For each of the local or joint treatment disposal schemes identified, alternative treatment and disposal methods were developed. Various treatment and disposal methods identified and developed were:

Treatment Alternatives

1. Secondary Treatment
2. Secondary Treatment and Filtration
3. Secondary Treatment and Nitrification
4. Advanced Wastewater Treatment

Disposal Alternatives

1. Discharge to the bay system or surface water streams, or to the Gulf of Mexico.
2. Discharge to the Ground Water.
3. Discharge by septic tank/soil absorption.
4. Discharge by Spray Irrigation.
5. Discharge by Wetland Application.

Initial alternatives were developed by combining wastewater service configurations and disposal and treatment measures. A "no-action" alternative was also considered along with the other wastewater facilities alternatives. A brief summary of the alternatives for the TSA and the CSA follows this introduction. More detailed information can be found within the Draft EIS or the two Technical Resource Documents. The Alternatives chosen can be found in Section 5, Preferred Alternatives.

Tampa Service Area (TSA)

Alternatives for wastewater management within the TSA are divided into two groups: treatment and disposal alternatives; and, collection and transmission alternatives.

Treatment and Disposal - Due to the existence of and present capacity expansion at the City of Tampa's Hookers Point treatment facility, no alternate treatment facility locations were considered. All alternative comparisons at the Hookers Point facility were based on wastewater treatment capacity equal to the estimated total wastewater quantities (113.96 mgd) from the Planning Area. Treatment alternatives were based on the selected disposal alternatives. Two disposal alternatives, the Gulf of Mexico outfall and spray irrigation, require secondary treatment of wastewater. Surface water discharge to Hillsborough Bay may require the use of advanced wastewater treatment (AWT) depending on the results of a wasteload allocation as required by the Wilson-Grizzle Act.

Capacity of the existing facilities at the Hookers Point Plant related to the potential alternatives for effluent disposal are summarized as follows:

1. Secondary Effluent - The existing activated sludge facilities have capacity to provide secondary treatment for the estimated total wastewater quantifies (113.96 mgd) from the Planning Area. Additional facilities will be required for the

preliminary treatment, disinfection, by-product solids treatment and effluent disposal.

2. AWT Effluent - The existing activated sludge facilities have capacity to provide either carbonaceous treatment or nitrification for the estimated total wastewater quantities (113.96 mgd) from the Planning Area. The existing facilities may also be operated to provide 2-step nitrification for 60 mgd. Additional facilities will be required for preliminary treatment, denitrification, disinfection and by-product solids treatment and for other unit processes depending on the manner of employment of the existing works.

The alternatives developed and evaluated for the expansion of the existing facilities to meet AWT requirements included series and several parallel arrangements and process variations to denitrify biologically without the use of methanol. Details of the various process alternatives considered are contained in the 201 Facilities Plan, Study Memorandum No. 8, Alternative Project Studies.

Three alternatives pertaining to treatment and disposal were further evaluated. These alternatives were:

- Secondary treatment with spray irrigation.
- Secondary treatment with Gulf outfall.
- AWT with discharge to Hillsborough Bay.

Collection and Transmission - The results of the study of the adequacy of the hydraulic capacity of the existing intercepting and secondary intercepting systems are described in the 201 Facilities Plan, Study Memorandum No. 6, Existing Facilities - Tampa Service Area - Wastewater Collection System. These results indicate that portions of the existing system are presently overloaded due to structural deterioration ~~or insufficient~~ hydraulic capacity. As a result, overflows of untreated wastewater into the Hillsborough River, streets, drainage canals and some bay waters and, service disruptions have occurred.

New collection and transmission facilities are needed to: provide relief to existing overloaded facilities; provide service to developed and developing neighborhoods presently serviced by individual systems; and, provide for the intercepting and transmission of the anticipated large quantities of wastewater generated in those portions of the Tampa Service Area which will be sewered after the year 1980.

Studies were carried out to examine the needs for collection and transmission facilities within the Tampa service area and, as a result of these studies, two viable alternatives were developed for further evaluation. One alternative was to provide service to all of the areas shown in Figure 2 . This alternative results in the collection of 96 mgd of wastewater flows by the year 2000.

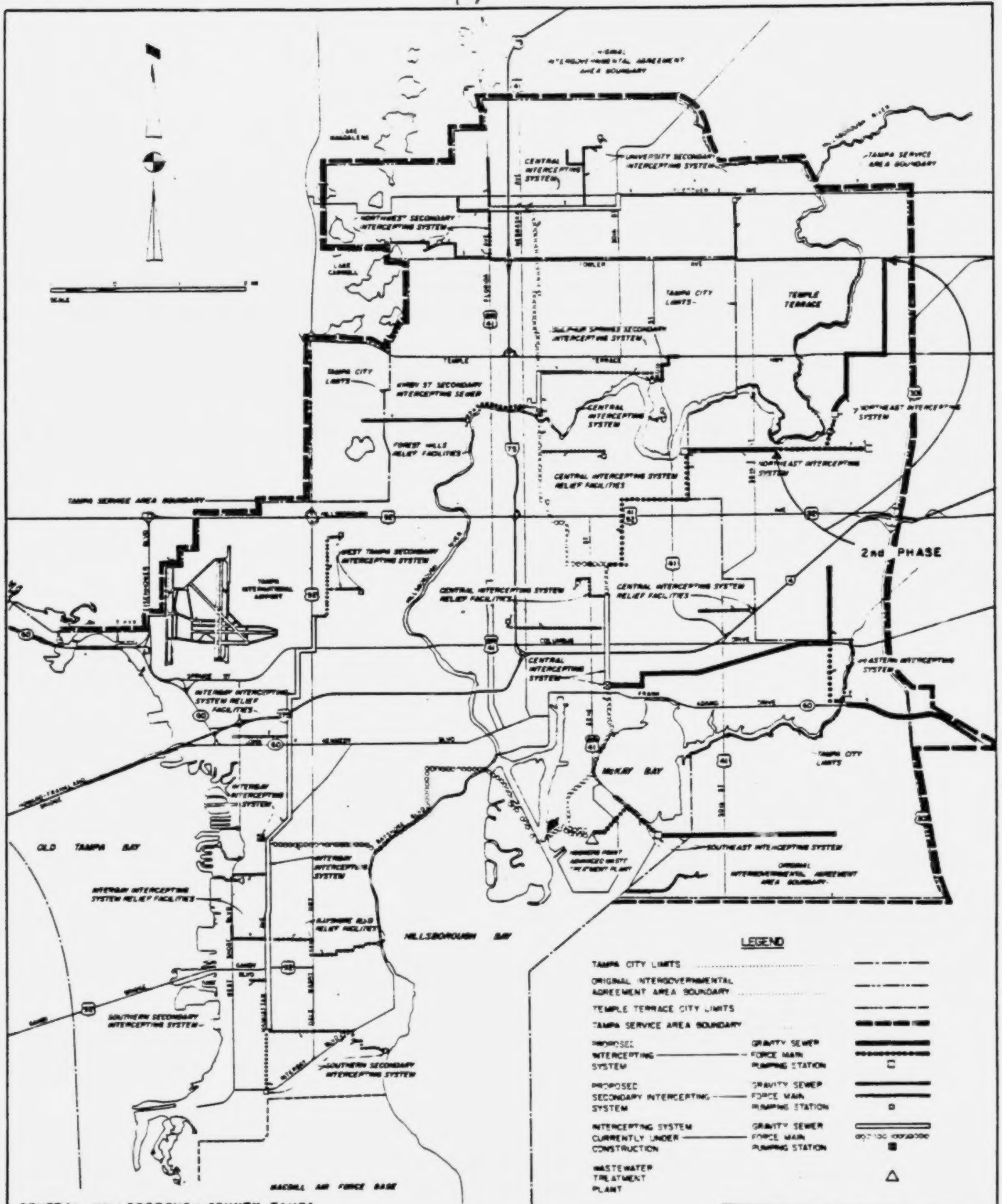
The second alternative was to provide service to all the areas shown in Figure 2 , _except_ the second phase of the Northeast Interceptor.

A "no action" alternative was also evaluated for the collection and transmission of wastewater within the TSA, but was considered inappropriate. It was considered inappropriate because the existing system requires repair and hydraulic relief to prevent overflows of untreated wastewater. In addition, most areas not currently sewered are unsuitable for septic tank disposal of wastewater because of periodic surface failures. In addition, a considerable number of interim package plants have been constructed which use percolation ponds for effluent disposal. These ponds represent potential sources of ground and surface water contamination. For these reasons, combined with the existence of a regional system, the "no action" alternative is considered inappropriate and the alternative assessment included only continued regionalization of the wastewater system.

County Service Area (CSA)

These were the alternatives evaluated in depth for the wastewater collection, transmission, treatment, and disposal in the following study areas within the CSA.

Deltona Study Area - Three alternatives were considered for the wastewater treatment and disposal in the Deltona Study Area:


ORIGINAL INTERGOVERNMENTAL AGREEMENT AREA BOUNDARY
CENTRAL INTERCEPTING SYSTEM
UNIVERSITY SECONDARY INTERCEPTING SYSTEM
TAMPA SERVICE AREA BOUNDARY
HILLSBOROUGH RIVER
LAKE MAGDALENE
NORTHWEST SECONDARY INTERCEPTING SYSTEM
LAKE CARROLL
FLETCHER AVE
FOWLER AVE
TAMPA CITY LIMITS
TEMPLE TERRACE
SULPHUR SPRINGS SECONDARY INTERCEPTING SYSTEM
TEMPLE TERRACE HWY
TAMPA CITY LIMITS
SECONDARY INTERCEPTING SEWER
CENTRAL INTERCEPTING SYSTEM
NORTHEAST INTERCEPTING SYSTEM
FOREST HILLS RELIEF FACILITIES
CENTRAL INTERCEPTING SYSTEM RELIEF FACILITIES
NORTHEAST INTERCEPTING SYSTEM
TAMPA SERVICE AREA BOUNDARY
HILLSBOROUGH AVE
2nd PHASE
WEST TAMPA SECONDARY INTERCEPTING SYSTEM
TAMPA INTERNATIONAL AIRPORT
CENTRAL INTERCEPTING SYSTEM RELIEF FACILITIES
CENTRAL INTERCEPTING SYSTEM RELIEF FACILITIES
COLUMBUS DRIVE
CENTRAL INTERCEPTING SYSTEM
EASTERN INTERCEPTING SYSTEM
INTERBAY INTERCEPTING SYSTEM RELIEF FACILITIES
KENNEDY BLVD
ADAMO DRIVE
MCKAY BAY
TAMPA CITY LIMITS
INTERBAY INTERCEPTING SYSTEM
OLD TAMPA BAY
INTERBAY INTERCEPTING SYSTEM
HOOKERS POINT ADVANCED WASTE TREATMENT PLANT
SOUTHEAST INTERCEPTING SYSTEM
ORIGINAL INTERGOVERNMENTAL AGREEMENT AREA BOUNDARY
INTERBAY INTERCEPTING SYSTEM RELIEF FACILITIES
BAYSHORE BLVD RELIEF FACILITIES
HILLSBOROUGH BAY
SOUTHERN SECONDARY INTERCEPTING SYSTEM
SOUTHERN SECONDARY INTERCEPTING SYSTEM
MACDILL AIR FORCE BASE
SCALE
LEGEND
TAMPA CITY LIMITS
ORIGINAL INTERGOVERNMENTAL AGREEMENT AREA BOUNDARY
TEMPLE TERRACE CITY LIMITS
TAMPA SERVICE AREA BOUNDARY
PROPOSED INTERCEPTING SYSTEM
GRAVITY SEWER
FORCE MAIN
PUMPING STATION
PROPOSED SECONDARY INTERCEPTING SYSTEM
GRAVITY SEWER
FORCE MAIN
PUMPING STATION
INTERCEPTING SYSTEM CURRENTLY UNDER CONSTRUCTION
GRAVITY SEWER
FORCE MAIN
PUMPING STATION
WASTEWATER TREATMENT PLANT

CENTRAL HILLSBOROUGH COUNTY-TAMPA
201 FACILITY PLAN
ENVIRONMENTAL REPORT
EPA No. C120634010

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TAMPA SERVICE AREA
PROPOSED EXPANSION OF INTERCEPTING AND SECONDARY INTERCEPTING SYSTEMS

SOURCE:
SMITH AND GILLESPIE
GREELEY AND HANSEN
ENGINEERS

DAMES & MOORE
FIGURE 2

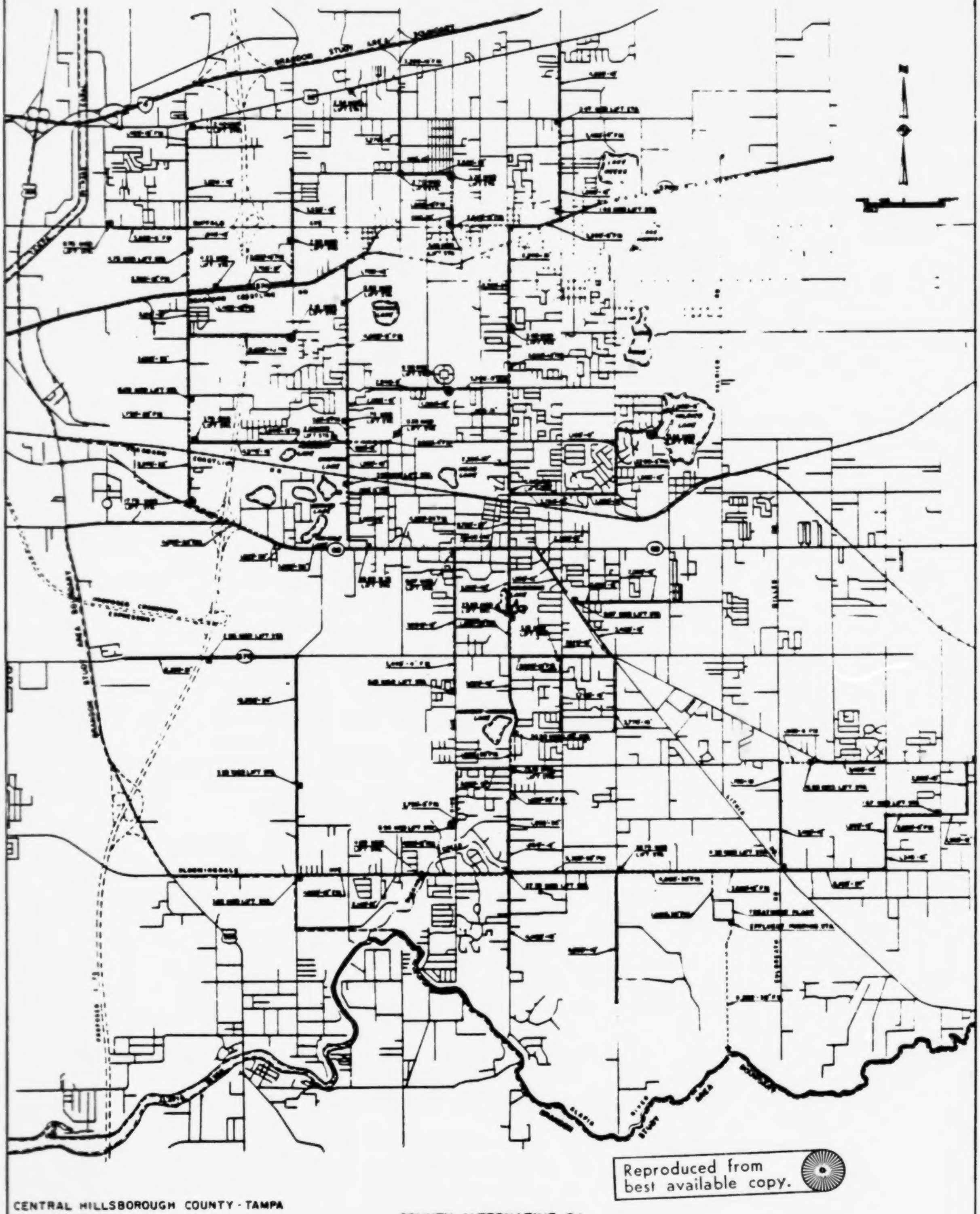
1. Construction of a facility within the study area to provide secondary treatment of the wastewater with wetlands disposal of effluent.
2. Collection of wastewater with transmission to the TSA for treatment at the City of Tampa's Hookers Point facility.
3. A "no action" alternative, where the developer, Deltona Corporation, would fund all of the construction costs for wastewater treatment and disposal facilities.

Thonotosassa Study Area - Three alternatives were considered for the wastewater treatment and disposal in the Thonotosassa Study area:

1. Construction of a facility within the study area to provide secondary treatment of the wastewater and disposal of effluent by spray irrigation.
2. Collection of wastewater with transmission to the TSA for treatment at Tampa's Hookers Point facility.
3. A "no action" alternative resulting in wastewater being treated and disposed of using individual septic tank systems.

Brandon Study Area - Four alternatives were considered for the wastewater treatment and disposal in the Brandon Study Area:

1. Construct a facility to treat all of the wastewater within the study area using secondary treatment plus nitrification and discharge the effluent to the Alafia River.
2. Construct a facility in the study area to provide secondary treatment of wastewater with disposal of the effluent by spray irrigation.
3. Collect and convey all wastewater to the TSA for treatment at Tampa's Hookers Point facility.
4. A "no action" alternative which would result in the continued use of septic tank systems and percolation ponds for the treatment and disposal of wastewater.



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COUNTY ALTERNATIVE B1

4A+4B+4D SECONDARY TREATMENT / NITRIFICATION /

DISCHARGE TO ALAFIA RIVER

SOURCE
SMITH AND GILLESPIE
GREELEY AND HANSEN
ENGINEERS

DAMES & MOORE

FIGURE II-13

In addition to the treatment and disposal alternatives, two alternatives were evaluated for the collection and transmission of wastewater within the Brandon Study Area:

1. The first alternative was to collect and transmit wastewater from all of the areas of concern shown in Figure 3 .
2. Hillsborough County has granted approval for a number of proposed land developments. These developments will greatly exceed the projected population levels for the county. It is therefore difficult to forecast which of the approved developments will actually be constructed and where major population concentrations will be located by the year 1990. The second alternative was developed to respond to these uncertainties. The second alternative will not provide sewer service for areas currently serviced by septic tank development in the future. Approval will be granted by EPA for only those phases scheduled for construction by the year 1990. Review of the additional sewer needs will be performed after the results of the 1990 census becomes available.

Riverview - Gibsonton Study Area - The following five alternatives were considered for treatment and disposal of wastewater in the Riverview - Gibsonton Study Area:

1. Construction of a facility within the study area to provide secondary treatment plus nitrification of wastewater with disposal of effluent by discharge to the Alafia River.
2. Construction of a facility within the study area to provide secondary treatment of wastewater with disposal of effluent by spray irrigation.
3. Construction of pumping stations and transmission lines to convey the wastewater to the TSA for treatment at Tampa's Hookers Point facility.
4. Construction of pumping stations and transmission lines to convey wastewater to proposed secondary treatment facilities in the South Hillsborough County 201 Planning Area with disposal of effluent by spray irrigation.

5. A "no action" alternative resulting in the continued use of septic tank systems and percolation ponds for treatment and disposal of future wastewater needs.

The following two alternatives were considered for the collection and transmission of wastewater within the Riverview-Gibsonton Study area:

1. The first alternative was to provide wastewater collection facilities to all of the areas shown in Figure 4 .
2. The second alternative was to wait until 1990 when proposed developments are established and at that point in time, planning approval can be granted based on the 1990 census.

4.0 SUMMARY OF THE ENVIRONMENTAL IMPACTS OF THE ALTERNATIVES

This section summarizes the major impacts of all the alternatives, including the no-action alternative, on the natural and man-made environment. A more detailed discussion of impacts is presented in Technical Reference Document, Volume II, Alternatives Development and Evaluation, and also the DEIS.

A. Impacts on the Natural Environment

There are basically ten categories which are discussed in the Draft EIS, in reference to the impacts on the natural environment from increased wastewater generation and its necessary disposal.

It is important to note that impacts will be associated with any extemporized construction activities at the time of implementation of the various construction projects. In the

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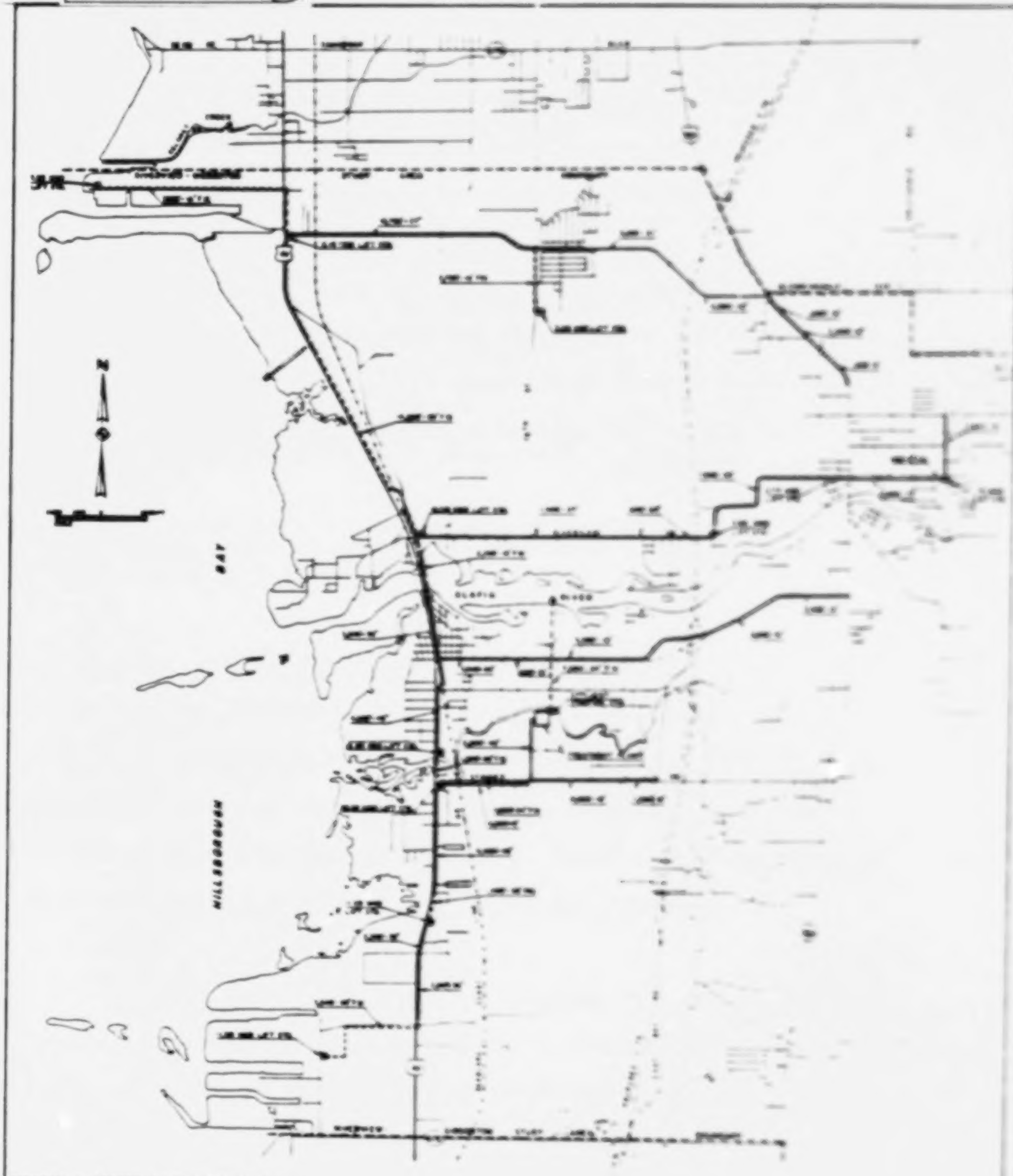

CENTRAL HILLSBOROUGH COUNTY - TAMPA
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COUNTY ALTERNATIVE RG1

3A + 3B SECONDARY TREATMENT / NITRIFICATION /

DISCHARGE TO ALAFIA RIVER

SOURCE
SMITH AND GILLESPIE
GREELEY AND HANSEN
ENGINEERS

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FIGURE II - [illegible]

case of wastewater facilities, most short-term impacts will arise from construction activities. Any long-term impacts will arise from operations plus the type of effluent discharge which is selected.

The air quality, geology, soils and noise of the planning area are not expected to be significantly affected by any of the proposed alternatives. Localized problems due to construction of various facilities (treatment plants, pipelines, spray irrigation sites) may occur but these should be short lived in nature. If the facilities are properly designed, installed and maintained, then long term impacts will be negligible.

Surface water represents the greatest potential for environmental impact. The following discussion gives a brief critique of the alternatives and their potential environmental impacts.

The major surface water resources in the Planning Area are the Hillsborough and Alafia Rivers and portions of the Tampa Bay System. Lesser water bodies impacted by the 201 planning process include Bullfrog Creek and Delaney Creek.

The major surface water pollution problem in the Planning Area is high nutrients and, at times, bacteria concentrations. While the majority of this problem is attributed to non-point sources of pollution discharges, the problem has been aggrevated by malfunctioning septic tank systems and package treatment plants. One area of special concern was the

Hillsborough River which is utilized by the City of Tampa as their major drinking water source.

All of the alternatives proposing discharge of treated effluent to surface waters would have increased nutrient loading within the surface water resources. Wasteload allocation studies will be performed to ascertain the degree of treatment required prior to discharge, ensuring that water quality standards are met.

In general, the No Action alternatives would have resulted in the greatest impact to the Planning Area's surface waters. Under the No Action alternatives, wastewater treatment needs of future development were expected to be satisfied by the continued use of small treatment plants and on-lot treatment systems. Future development areas in the Deltona Study Area, the Riverview-Gibsonton Study Area and the northeastern portion of the Tampa Service Area were generally unsuitable for septic tank systems. Improper use of septic tank systems in these areas would have resulted in further surface failures.

In the Thonotosassa Study Area, the preferred alternative will be the No Action alternative. However, soils in the Thonotosassa Study Area were considered suitable for septic tank usage. For the projected population, no impacts to the area's surface waters are anticipated.

The preferred alternatives result in the least negative impacts to the Planning Area's surface waters. Even discharge of properly treated effluent from the City of Tampa's Hookers

Point facility to Hillsborough Bay will have no significant impact on Bay water quality (Ross, 1977, 1978).

Construction activities could produce major sediment loads to the Hillsborough and Alafia Rivers and Hillsborough Bay, especially during pipeline construction. However, this short-term impact would have greater implications on aquatic organisms than water quality.

Ground water is used extensively in the Planning Area for domestic and agricultural supplies. At present, ground water contamination problems are minor and generally localized. In general, the preferred alternatives result in a major beneficial impact to the subsurface water resources of the Planning Area. Spray irrigation and percolation ponds will be designed and closely monitored to insure no significant impact will transpire.

In general, the surface ecosystem will undergo adverse impact due to increased population pressures and associated human disturbances. These increased population pressures and associated human disturbances will occur with or without the implementation of the preferred alternatives. Aquatic and terrestrial flora and fauna will be subject to impact. The degree of deterioration will be determined by specific developmental processes and land use measures implemented to protect sensitive areas. Increased urbanization could cause withdrawal and mortality of some rare and endangered species. This will be minimized with careful planning and proper implementation of the preferred alternatives.

B. Impacts on the Man-Made Environment

One of the major features of developing new or expanded wastewater facilities are the impacts upon population growth and land use. Wastewater facilities serve as a stimulus to population growth in certain areas, such as, sewering of rural areas, which in turn impact a variety of man-made features. Both population growth and potential land use trends were taken into account when selecting the various alternatives. Land use and population growth are going to occur regardless of the alternatives selected, but the preferred alternatives result in an orderly growth by phasing wastewater facilities to meet needs at that point in time. The ability to control urban sprawl into areas which are environmentally sensitive helps provide for an orderly, well developed community.

Economic conditions will benefit from any associated construction employment, purchase of housing, equipment, and materials.

In regards to the Historical, cultural and archaeological resources and the potential impact to these resources, spray irrigation could cause the greatest impact because of the large land requirements for such activities. In general, without prior recovery of the artifacts, the proposed project could result in loss of currently unknown sites.

Recreational resources could have to be expanded as population pressures increase. Sufficient undeveloped land is expected to be available to meet the increased park area demand.

Transportation facilities and resource use could both experience pressure due to population growth. With proper planning some of the pressures can be eliminated, but a greater strain will be put on the existing highway system and instable traffic flows could occur. Resource shortage can be avoided by proper planning.

Community services, such as, health care, education and libraries, fire protection, police protection, and the administrative structure to manage those services would all experience adverse impacts initially, until adequate levels of service are obtained to deal with the increased population pressures.

Careful planning will control random population growth and its associated problems. The implementation of the preferred alternatives for wastewater treatment will provide a means of controlling pollution levels associated with population growth. Over the long term, surface water and ground water resources will hopefully improve through the elimination of overloaded and deteriorating facilities and careful planning will provide a means of dealing with increased pressures on the environment.

5.0. MITIGATION MEASURES

The purpose of this part is to discuss measures which would reduce the severity of those environmental impacts outlined in the DEIS. These mitigative measures address activities to be instituted during the design, construction and operational phases of the preferred alternative. While these mitigative measures will not eliminate the environmental impacts, they will reduce the severity of identified adverse impacts. It should be noted that many of the measures identified in this part are not within the purview of EPA to implement, but are the functions of state or local governments.

A. MITIGATION OF IMPACTS ON THE NATURAL ENVIRONMENT

This section addresses the areas of impact described in the DEIS. In each case where an adverse impact on any natural parameter is anticipated, potential mitigative measures are discussed. Generally, adverse impacts on natural resources are the result of construction activities. Therefore, for the most part, mitigative measures deal with effective methods of mitigating potential impacts during and immediately following construction.

Air Quality

While some impacts on air quality will be long-term in nature, the short-term construction impacts on air quality will be more noticeable (but moderate in nature). Suspended particulates (dust) and equipment emissions are expected to increase during construction. These may be mitigated by the following controls:

1. Utilize construction equipment which meets current emission standards.
2. Immediately revegetate all cleared areas during the construction process.

3. Utilize scheduled and frequent dust containment practices such as the spraying of exposed areas.
4. Minimize the amount of land under active construction at any one time.
5. Minimize open burning during construction activities.

Odor

Overall impact of the alternatives on odor will be minimal. However, minor odors may originate from the proposed spray irrigation areas in the Brandon Study Area. These minor impacts can be mitigated by the following:

1. Control land use of areas adjacent to treatment sites in order to discourage residential development and encourage agricultural or industrial development.
2. Institute proper sludge management techniques in order to reduce odor production.

Noise

The impact of noise will be noticeable only during construction activities. Long-term impacts to noise will be associated with treatment plant and pump station operation but should be minimal. Construction impacts can be mitigated by:

1. Requiring sound control devices on construction equipment.
2. Limiting construction activities to normal business hours.

Soils

The major soil impact will be through soil erosion during construction. This impact can be reduced by:

1. Limiting the size of the pipeline corridor to the minimal possible areas of disturbance.

2. Prepare and strictly enforce construction plans which require the rapid stabilization and revegetation of construction areas.
3. Institute best management controls in order to reduce the amount of non-point source runoff from construction sites.

Surface Water Resources & Aquatic Ecology

Impacts to the surface water resources in the Planning Area will generally be associated with construction activities due to erosion and sedimentation. Measures to minimize these impact are discussed under soils.

Increased urbanization in the Planning Area will result in increased non-point sources of pollution. Management controls for non-point sources of pollution outlined in the 208 Plan for the Tampa Bay Region should be employed to minimize this impact.

Subsurface Water Resources

Use of the proposed method of spray irrigation for effluent disposal in the Brandon Study Area represents a source of ground water pollution if sever plant malfunctions occur. Strict enforcement of treatment requirements and careful design of the proposed facility are necessary measures in ensuring maintenance of ground water quality.

B. MITIGATION OF IMPACTS ON THE MAN-MADE ENVIRONMENT

This section addresses the areas of impact described in the DEIS. In each case where an adverse impact on any manmade parameter is anticipated, potential mitigative measures are briefly discussed. These mitigative measures, for the most part, involve implementation of tools for effective planning and environmental protection in the Central Hillsborough County - Tampa 201 Planning Area.

Population and Land Use

The population of the Planning Area is expected to continue its rapid growth with or without the proposed project. There are available several planning and regulatory tools to be employed by the municipalities and government agencies, that will be effective in managing growth and environmental change. Through effective management of land use, any potential increases in population would also be managed effectively. Planning and regulatory tools considered are discussed in the following section.

Land Use and Development Controls

In order to effectively plan and manage land resources, there is a variety of techniques available to municipalities in the study area. The following specific land use and development controls could be made available to municipalities to help manage land use effectively.

Comprehensive Plans - The comprehensive plan provides a complete framework for community development. The plan includes goals and objectives, a land use plan, transportation plan, community facilities plan, an evaluation of environmental considerations, and the community's relationship to the region and to adjacent communities. Such a comprehensive plan has been developed for the County (Horizon 2000 Plan) and also for the City of Tampa (Tampa 2000 Comprehensive Plan).

Zoning Ordinances - The zoning ordinance is a strong tool for implementing a comprehensive plan through the municipality's inherent power to exercise reasonable control over property and persons under its jurisdiction. It is especially important that the zoning ordinance be consistently administrated for land use, community facilities, and other local planning to be effective. Both the County and City of Tampa are presently undergoing comprehensive revision. Proposed changes are expected to be available for public review by the end of 1981.

Easements - Positive and negative easements are ways to acquire a permanent interest in land. Governments, individuals, and organizations may obtain positive easements in order to establish the legal right to use part of another's private land for certain limited and stated purposes. Negative easements permanently limit the owner's use of his land, but do not provide for public use. For example, the purchase of conversation easements would limit development in critical areas such as woodlands, rugged terrain, floodplains and open spaces.

The County has the ability to establish conservation easements through community unit zoning. A developer may set aside sensitive areas, as identified by the Hillsborough Environmental Protection Commission, and receive a "density credit" for this designated area. This density credit can then be transferred to developable uplands.

Fee Simple Acquisition of Land - The outright acquisition of land can be accomplished through purchase and lease-back arrangements with a willing owner. Land subjected to tax delinquency can be purchased at certain auctions, or land can be acquired if there is a mortgage in default of payments. Gifts of land are also possible from citizens, groups and corporations to municipalities, conservancies, and other organizations. Scenic or conservation easements can be purchased to protect natural resources. Neither the County nor the City of Tampa actively pursue this method of land development control.

Conservation Zoning District - There are established to control development in areas where physiographic problems exist such as steep slopes, difficult access, or outstanding natural beauty and environmental value. These areas might be appropriate for uses such as forestry, recreation, agriculture, and perhaps even some low-density residential development.

The County does not employ this development control method. The city of Tampa is currently considering implementation of some form of Conservation District for "green areas" identified in the comprehensive plan.

Transfer of Development Rights - The transfer of development rights is a way to acquire a permanent interest in land. Local governments may acquire an owner's right to develop his land through purchase or other compensation. The owner retains title to his land but cannot develop it into, say, a housing subdivision. This method can be used to protect sensitive areas such as agricultural lands, wetlands and floodplains. Neither the City nor the County presently employ this method of development control.

Floodplain Ordinances - As more and more land is developed, it is essential that floodplains remain undeveloped and protected in order to minimize damages resulting from flooding. Floodplain zoning districts should protect, at a minimum, all lands located within the 100-year flood zones of every stream. In general, no structures or fill should be allowed in these areas, and land uses should be restricted to agriculture, recreation, and other appropriate land uses.

The applicable County regulation establishes minimum floor elevations but does not restrict development in floodplain areas. The City of Tampa currently has an ordinance which restricts development in the Curiosity Creek/Forest Hills area preventing development in flood-prone areas.

Control Of Non-Point Pollution Sources - There are a number of administrative and regulating approaches to reducing the impact of non-point source pollution. These approaches are described in the 208 Facilities Plan for the Tampa Bay Region.

Economic Conditions

The selected alternative is not expected to cause any significant, long-term adverse impacts on the economy of the study area.

Historical Cultural and Archaeological Resources

There is a potential that undetected archaeological and/or historical resources could be present within areas of planned construction. Construction of pipelines could ruin the value of these resources. In order to mitigate or avoid any adverse impacts to historic and archaeological resources, a qualified archaeologist will perform a standard archaeological and historic sites survey prior to construction if mandated by the State Historic Preservation Officer and State Archaeologist.

Recreational Resources

Mitigative measures are not called for here, since the proposed action will not cause any significant adverse impacts to existing recreational resources.

Transportation

Transportation problems caused by the projected population growth can be alleviated through planning and significant financial expenditures. Planning for growth allows local governments to establish a network of feeder routes and streets that both alleviate congestion and tend to organize residential patterns. Air and noise pollution will also be reduced using careful transportation planning.

Resource Use

Again, any adverse impacts to resources will be mitigated through use of planning tools. The implementation of soil erosion and sedimentation control plans will help alleviate any sediment problems caused by removal of the protective vegetation cover when laying interceptor lines.

Water Supply

The potential for adverse impacts to the City of Tampa's water supply exists if development is allowed within the floodplain of the Hillsborough River in the Northeast Study Area. The potential for this impact can be mitigated by implementing a sound floodplain protection ordinance prohibiting development in this area.

Problems associated with increased demand can be mitigated by rewriting plumbing codes to require the use of water saving devices and by the institution of wastewater recycling.

Community Services and Facilities

Planning recommendations should be implemented which would make available sufficient space for facilities when the need for additional facilities arise. Plans for necessary future expansion are presented in the Horizon 2000 Land Use Plan. It is also very important that zoning decisions support the comprehensive planning program for that program to have a chance to succeed.

6.0 AGENCY DECISION

After the development and careful evaluation of project alternatives, the preferred alternatives for the TSA and CSA were selected which were considered to be the best combination of being environmentally acceptable, cost-effective and implementable. These alternatives are identified and summarized in the following sections.

All of the alternatives were designed to serve the needs of the population projected for the year 2000. Because the study area needs were based on projected population increases, the design conditions used for evaluation of alternatives should not be realized until the year 2000. Therefore, a phased approach to the construction of facilities was developed to meet the wastewater collection, treatment and disposal needs of the area as the wastewater flows increase. The phases of the program were developed to allow maximum use of existing sewerage facilities and greater utilization of new facilities during their design lifetime.

A. Wastewater Treatment and Disposal

The preferred alternative is the discharge of treated wastewater to Hillsborough Bay. The exact level of treatment required is not now fully established. This preferred alternative, however, is the most cost effective and environmentally sound regardless of the level of treatment finally selected as required to met water quality standards. While this alternative does continue the previously established pattern of discharge to Hillsborough Bay, it does recognize substantial improvements in water quality given the operations of the Hookers Point AWT plant and does not preclude future recycling or reuse options.

B. Wastewater Collection and Transmission

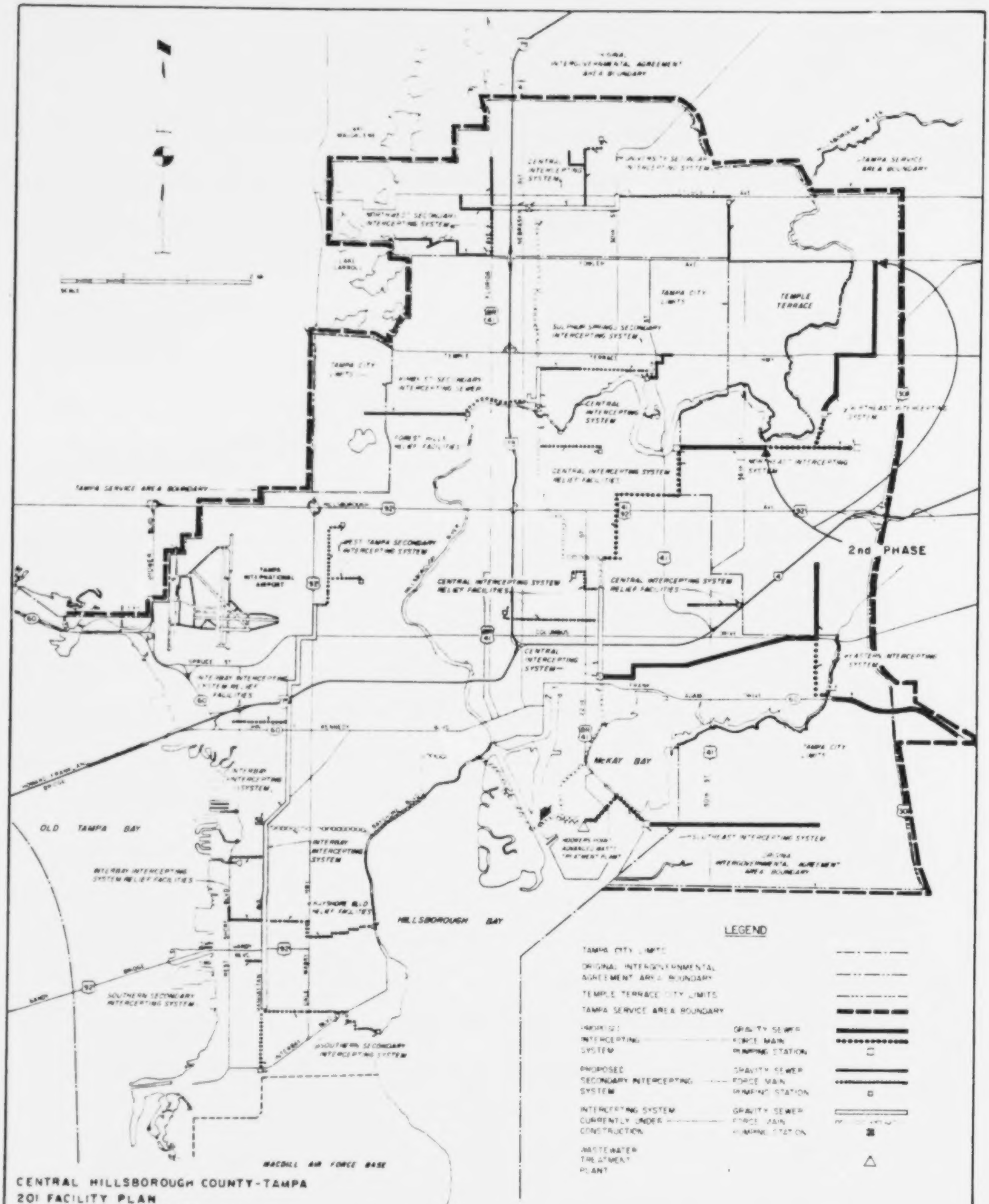
The preferred alternative is the provision of service to all areas as shown in Figure 5 excluding the second phase of the Northeast Interceptor. This option will provide the most cost-effective and environmentally sound system for the TSA without encouraging development in the Hillsborough River floodplain and above the City of Tampa's water supply intakes.

County Service Area

Deltona Study Area - The preferred alternative for wastewater collection, treatment and disposal in the Deltona Study Area is the "No Action" alternative. This alternative avoids the use of Federal funds to encourage development in a wetlands environment. This alternative also is consistent with expending grant funds to clean-up water quality problems rather than promoting development since water quality problems have not been demonstrated to exist in this area.

Thonotossa Study Area - The preferred alternative for wastewater collection, treatment and disposal in the Thonotosassa Study Area is the "No Action" alternative. This alternative avoids the use of Federal funds to encourage development in an area where no water quality problems exist or are projected to exist. The need for provision of service in this area should be reevaluated after the 1990 census.

Brandon Study Area - The preferred alternative for wastewater treatment and disposal for the Brandon Study Area is construction of a treatment plant with secondary treatment and disposal of effluent by spray irrigation. This alterna-


ORIGINAL INTERGOVERNMENTAL AGREEMENT AREA BOUNDARY
TAMPA SERVICE AREA BOUNDARY
CENTRAL INTERCEPTING SYSTEM
UNIVERSITY SECONDARY INTERCEPTING SYSTEM
NORTHWEST SECONDARY INTERCEPTING SYSTEM
LAKE CARROLL
FOWLER AVE
TAMPA CITY LIMITS
TEMPLE TERRACE
SULPHUR SPRINGS SECONDARY INTERCEPTING SYSTEM
TAMPA CITY LIMITS
CENTRAL INTERCEPTING SYSTEM
FOREST HILLS RELIEF FACILITIES
NORTHEAST INTERCEPTING SYSTEM
CENTRAL INTERCEPTING SYSTEM RELIEF FACILITIES
TAMPA SERVICE AREA BOUNDARY
WEST TAMPA SECONDARY INTERCEPTING SYSTEM
TAMPA INTERNATIONAL AIRPORT
CENTRAL INTERCEPTING SYSTEM RELIEF FACILITIES
CENTRAL INTERCEPTING SYSTEM RELIEF FACILITIES
2nd PHASE
CENTRAL INTERCEPTING SYSTEM
EASTERN INTERCEPTING SYSTEM
INTERBAY INTERCEPTING SYSTEM RELIEF FACILITIES
INTERBAY INTERCEPTING SYSTEM
McKAY BAY
TAMPA CITY LIMITS
OLD TAMPA BAY
HOOKERS POINT ADVANCED WASTE TREATMENT PLANT
SOUTHEAST INTERCEPTING SYSTEM
ORIGINAL INTERGOVERNMENTAL AGREEMENT AREA BOUNDARY
INTERBAY INTERCEPTING SYSTEM RELIEF FACILITIES
INTERBAY INTERCEPTING SYSTEM
BAYSHORE BLVD RELIEF FACILITIES
HILLSBOROUGH BAY
SOUTHERN SECONDARY INTERCEPTING SYSTEM
SOUTHERN SECONDARY INTERCEPTING SYSTEM
MACDILL AIR FORCE BASE
SCALE
LEGEND
TAMPA CITY LIMITS
ORIGINAL INTERGOVERNMENTAL AGREEMENT AREA BOUNDARY
TEMPLE TERRACE CITY LIMITS
TAMPA SERVICE AREA BOUNDARY
PROPOSED INTERCEPTING SYSTEM
GRAVITY SEWER
FORCE MAIN
PUMPING STATION
PROPOSED SECONDARY INTERCEPTING SYSTEM
GRAVITY SEWER
FORCE MAIN
PUMPING STATION
INTERCEPTING SYSTEM CURRENTLY UNDER CONSTRUCTION
GRAVITY SEWER
FORCE MAIN
PUMPING STATION
WASTEWATER TREATMENT PLANT

CENTRAL HILLSBOROUGH COUNTY-TAMPA
201 FACILITY PLAN
ENVIRONMENTAL REPORT
EPA No C120634010

TAMPA SERVICE AREA
PROPOSED EXPANSION OF INTERCEPTING AND SECONDARY INTERCEPTING SYSTEMS

SOURCE:
SMITH AND GILLESPIE
GREELEY AND HANSEN
ENGINEERS

DAMES & MOORE
FIGURE 5

tive is the most cost-effective, provides the needed treatment capacity and recycles wastewater. Site specific analysis will be needed to verify the environmental suitability of each proposed site.

The preferred alternative for wastewater collection and transmission is that which provides plan approval now only to phases scheduled for construction by 1990 and provides for continuation of existing and future development on septic tanks. Planning approval on additional phases will be delayed until results of the 1990 census are available and a need can be justified. Hillsborough County has given approvals to land developments which far exceed the projected population levels. It is difficult to tell now which of these plans will be the most economically viable and where major population concentrations will be in 1990. No significant water quality problems have been identified which would justify the expenditure of funds for serving septic tank areas. The 201 consultant will evaluate each area now on septic tanks to determine the need for service. Monitoring of nitrate levels in area water supply wells will continue to identify any future build-up which would necessitate the need for sewer service.

Riverview-Gibsonton Study Area - The preferred alternative for treatment and disposal of wastewater in the Riverview-Gibsonton Study Area is the Alternative which involves pumping to the proposed South County facilities for treatment and disposal by spray irrigation. This alternative is the most cost-effective, provides needed treatment capacity and provides for recycling of wastewater. Site's specific analysis will be needed to verify the environmental suitability of each proposed site.

The preferred alternative for the collection and transmission of wastewater in the Riverview-Gibsonton Study Area is that which provides for plan approval now only to phases scheduled for construction by 1990. Planning aproval on additional phases will be delayed until results of the 1990 census are available and need can be justified. Hillsborough County has given approval to land developments which far exceed the projected population levels. It is difficult to tell now which of these plans will be the most economically viable and where major population concentrations will be following 1990.

7.0 IDENTIFIED ISSUES AND CONCERNS

A. Introduction

Public participation is an important part of the EIS process. It provides for active public involvement in developing and evaluating wastewater facilities. Moreover, it is required by federal regulations governing the preparation of environmental impact statements.

At the beginning of the Central Hillsborough County/Tampa Area EIS and 201 Facility Planning process, a public participation program was established to provide opportunities for interested groups, individuals and governmental agencies to participate in the development of the EIS. This participation was achieved through the use of scoping meetings, a Citizen Advisory Committee, public meetings and constant coordination with local, regional, state and federal agencies.

B. Coordination With Local, Regional, State And Federal Agencies

Throughout the EIS process, it was necessary to contact many agencies - local, regional, state and federal in order to gather data which aided in the preparation of the various documents produced. Table 7-1 is a listing of the major agencies contacted.

C. Public Participation Program

Scoping Meeting

A Public scoping meeting was held in Tampa on December 20, 1978. The proposed development of the EIS and 201 Facility plan was discussed. Representatives of the City and County governments, the 201 consultants, the EPA, and the EIS consultant presented the goals and objectives of the coordinated 201 Facilities Plan/EIS. Comments were solicited from the attending public. In general, the public was concerned with improvement of area water quality, at affordable costs, and with maximum reuse of water to the extent possible.

Citizen's Advisory Committee

The establishment of a Citizen's Advisory Committee was an important aspect of the Environmental Impact Statement (EIS) Public Participation Program. The committee was formed with the express purpose of focusing the attention of local residents and public agencies on the EIS. The committee consisted of 22 members and was representative of a cross-section of local interests. Each member of the group was asked to review and comment on all study materials, as well as to offer any other input during the course of the study. Several committee meetings were held throughout the study for review purposes. The contribution of the group was especially necessary to identify a preferred alternative. Specific functions and duties of the group included.

1. Identify local planning and environmental objectives.
2. Identify study area issues and conflicts regarding wastewater disposal and environmental conditions.
3. Assist in development and evaluation of wastewater alternatives.
4. Review draft and final Environmental Impact Statement.

Member of the Citizen's Advisory Committee are listed in Table 7-2.

Advisory Committee Meetings

Meetings of the Advisory Committee were held at various intervals in the 201 planning process. Minutes of these meetings are included in the 201 Facility Plan, Appendix A, "Public Participation Information".

The first meeting of the Advisory Committee was held on June 8, 1979. The facilities planning process was explained to the committee and the responsibilities of the committee in developing an effective plan were discussed. Environmental considerations and general alternatives for sewage collection, treatment and disposal were also discussed.

On August 30, 1979, the baseline environmental conditions of the planning area and alternative plans for wastewater collection, treatment and disposal were presented to the Advisory Committee. Several of the committee members and their representative organizations submitted comments on the information presented. In response to these comments, a workshop meeting was held on September 18, 1979, to discuss the comments in detail.

The baseline environmental conditions and alternatives were also presented at a workshop held with representatives of FDER and EPA on September 25, 1979, and at a meeting with the EPA project engineer on October 11, 1979. These meetings were held to inform these review agencies of the progress of the planning project and to assure that all potential alternatives were being considered.

On December 18, 1979, results of the cost-effectiveness evaluation and the environmental aspects of the alternatives were presented to the Advisory Committee. Recommendations for a final plan were made by the consultants and discussed with the committee.

Public Meeting

A public meeting on the alternative evaluation and recommended plan was held on December 19, 1979. This meeting was well advertised to encourage interest from the general public and received media coverage. Minutes of this public meeting are also included in Appendix A of the 201 Facilities Plan. The protection of wetland areas in the Hillsborough River floodplain and the Deltona Study Area was a major concern voiced by environmental groups.

Draft EIS Public Hearing

A public hearing was assembled to receive the public's and other agencies' comments on the wastewater management proposal contained in the draft Environmental Impact Statement for Tampa and central Hillsborough County, Florida in Tampa, Florida on November 18, 1981. All questions and comments on the DEIS, written and verbal, are individually addressed in section 3, Public Participation, of the final EIS.

TABLE 7-1

COORDINATION WITH FEDERAL, STATE, REGIONAL AND LOCAL AGENCIES

FEDERAL CONTACTS

U.S. EPA, Region IV
U.S. Geological Survey
U.S. Army Corps of Engineers, Jacksonville District
U.S. Department of Agriculture, Soil Conservation Service
U.S. Department of Commerce
U.S. Department of Housing and Urban Development
U.S. Fish and Wildlife Service

STATE CONTACTS

Florida Department of Environmental Regulation
Florida Bureau of Geology
Florida Department of Transportation
Florida Bureau of Census
Florida Department of State, Division of Archives
Florida Department of Education
Florida Department of Natural Resources
Florida Game & Freshwater Fish Commission

REGIONAL CONTACTS

Southwest Florida Water Management District
Tampa Bay Regional Planning Council
West Coast Regional Water Supply Authority

LOCAL CONTACTS

Hillsborough County Environmental Protection Commission
Hillsborough County Planning Commission
City of Tampa
Hillsborough County

TABLE 7-2

CITIZEN'S ADVISORY COMMITTEE MEMBERS

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TABLE 7-2 (Cont'd)

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CARP (Citizen Against River Pollution)
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Ruskin, Florida 33570

Richard Wilkins
Hillsborough County
Environmental Protection
Commission
1900 9th Avenue
Tampa, Florida 33605

Dr. John Sharpe
Mrs. Phyllis Sharpe
Ms. Sally Casper
Tampa Audobon Society
12137 River Hills Drive
Tampa, Florida 33617

FINAL ENVIRONMENTAL IMPACT STATEMENT

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1.0
PREFACE

In August of 1981, the Environmental Protection Agency published and distributed a Draft Environmental Impact Statement (DEIS) on the proposed wastewater facilities for the City of Tampa, the City of Temple Terrace and portions of adjacent unincorporated Hillsborough County. The DEIS was written pursuant to the National Environmental Policy Act (NEPA) of 1969. While the DEIS was a complete document, much of the detailed technical information and supporting data were presented in a two-volume Technical Reference Document. The DEIS was distributed to the appropriate Federal, State, and local agencies and to interested individuals. The Technical Reference Document was available for review at a number of locations and was distributed on a limited basis.

This final Environmental Impact Statement (FEIS) has been prepared to conform with the Council on Environmental Quality (CEQ) regulations (40 CFR Part 6) for implementing NEPA. The essence of the NEPA decision process is contained in the Executive Summary for the FEIS; it describes the existing problem requiring a decision, summarizes alternatives--including mitigative measure--and their associated impacts, identifies major concerns and issues, and presents EPA's conclusions and decision.

In an effort to avoid excessive paperwork and costly reproduction, the DEIS text has not been reprinted in the FEIS. The supporting information furnished in the DEIS and its Technical Reference Documents should be reviewed and are incorporated herein by reference.

Chapter 2 describes EPA's chosen alternative. Chapter 3 describes changes made to the project since publication of the draft EIS. Chapter 4 contains a description of the public participation program conducted for the EIS. Included in this chapter are copies of written communications submitted to EPA in response to the DEIS, followed by EPA's responses to each individual comment. These are followed by a transcript of the public hearing on the DEIS and a point by point response to the hearing comments.

Chapter 5 of the FEIS lists the agencies and groups to whom the FEIS will be sent for review and comment and Chapter 6 identifies the individuals involved in its preparation.

In accordance with CEQ regulations, there will be a 30-day review and comment period following publication of this FEIS and its filing with the CEQ.

2.0

AGENCY DECISION

A. Wastewater Treatment and Disposal

The agency's decision regarding wastewater treatment and disposal in the TSA is to discharge treated wastewater to Hillsborough Bay. The exact level of treatment required is not now fully established. It is the most cost effective and environmentally sound decision regardless of the level of treatment finally selected, as required to meet water quality standards.

B. Wastewater Collection and Transmission

The agency's decision is the provision of service to all areas as shown in Figure 5-1 excluding the second phase of the Northeast Interceptor. This option will provide the most cost-effective and environmentally sound system for the TSA without encouraging development in the Hillsborough River floodplain and above the City of Tampa's water supply intakes.

County Service Area

Deltona Study Area - The agency's decision for wastewater collection, treatment and disposal in the Deltona Study Area is the "No Action" alternative. The alternative avoids the use of Federal funds to encourage development in a wetlands environment. This alternative also is consistent with expending grant funds to clean-up water quality problems rather than promoting development since water quality problems have not been demonstrated to exist in this area.

Thonotosassa Study Area - The agency's decision for wastewater collection, treatment and disposal in the Thonotosassa Study Area is the "No Action" alternative. This alternative avoids the use of Federal funds to encourage development in an area where no water quality problems exist or are projected to exist. The need for provision of service in this area should be reevaluated after the 1990 census.

Brandon Study Area - The agency's decision for wastewater treatment and disposal for the Brandon Study Area is construction of a treatment plant with secondary treatment and disposal of effluent by spray irrigation. This alternative is the most cost-effective, provides the needed treatment capacity and recycles wastewater. Site specific analysis will be needed to verify the environmental suitability of each proposed site.

The agency's decision for wastewater collection and transmission is that which provides plan approval now only to phases scheduled for construction by 1990 and provides for continuation of existing and future development on septic tanks. Planning approval on additional phases will be delayed until results of the 1990 census are available and a need can be justified. Hillsborough County has given approvals to land developments which far exceed the projected population levels. It is difficult to tell now which of these plans will be the most economically viable and where major population concentrations will be in 1990. No significant water quality problems have been identified which would justify the expenditure of funds for serving septic tank areas. The 201 consultant will evaluate each area now on septic tanks to determine the need for service. Monitoring of nitrate levels in area water supply wells will continue to identify any future build-up which would necessitate the need for sewer service.

Revised design flows upon which E.P.A. eligibility is based have been computed for the Brandon Area. The original flows were based on the projections of the Horizon 2000 land use plan. Current E.P.A. regulation changes have revised the original estimates for eligible industrial flows. Therefore, the total eligible flow for the Brandon Study Area has been reduced to 7.11 MGD from previous estimates of 9.72 MGD. This reduction in flow will not result in any phasing changes for the Brandon Study Area. Although, any difference in funding for eligible flows will have to be made up on a local level if future industrial expansion warrants any capacity changes.

Riverview-Gibsonton Study Area - The agency's decision for treatment and disposal of wastewater in the Riverview-Gibsonton Study Area is the Alternative which involves pumping to the proposed South County facilities for treatment and disposal by spray irrigation. This alternative is the most cost-effective, provides needed treatment capacity and provides for recycling of wastewater. Site specific analysis will be needed to verify the environmental suitability of each proposed site.

Revised design flows upon which E.P.A. eligibility is based have been computed for the Riverview-Gibsonton Study Area. The original flows were based on the projections of the Horizon 2000 land use plan. Current E.P.A. regulation changes have revised the original estimates for eligible industrial flows. Therefore, the total eligible flow for the Riverview-Gibsonton Study Area has been reduced to 2.56 MGD from previous estimates of 5.83 MGD. This reduction in flow will not result in any phasing changes for the Riverview-Gibsonton Study Area. Although, any difference in funding for eligible flows will have to be made up on a local level, if future industrial expansion warrants any capacity changes.

The agency's decision for the collection and transmission of wastewater in the Riverview-Gibsonton Study Area is that which provides for plan approval now only to phases scheduled for construction by 1990. Planning approval on additional phases will be delayed until results of the 1990 census area available and need can be justified. Hillsborough County has given approval to land developments which far exceed the projected population levels. It is difficult to tell now which of these plans will be the most economically viable and where major population concentrations will be following 1990.

C. Additional Studies

1. Site Specific Spray Irrigation Studies

Spray Irrigation sites will be subject to the specific rules and regulations of E.P.A. and the Department of Environment Regulation, Chapter 17-6 (.04 and .08), Florida Administrative Code (FAC). Also, any appropriate local regulatory agencies should be contacted at the appropriate time when more detailed plans for each site have been laid out during the design phase.

Biological assessment of any tract used for spray irrigation will have to occur, in order that, the proper measures are selected to both select and protect the appropriate native communities of flora and fauna found within the proposed sites. This assessment will be subject to approval by E.P.A. and D.E.R.

Soil tests will have to be run to determine infiltration rates and the necessary rate of application of wastewaters to assure that the assimilating capacity of the soils are not exceeded for any spray irrigation site selected.

Also, any spray irrigation site selected is subject to an archaeological investigation by the Florida Department of State. Any archaeological sites deemed significant by the Florida Department of State will have to be protected or the appropriate mitigating measures carried out before the site is developed.

2. Wasteload Allocation Studies for Hillsborough Bay.

E.P.A.'s chosen alternative for the treatment and disposal of wastewater is treatment at the City of Tampa's Hookers Point facilities with disposal of effluent to Hillsborough Bay. The level of treatment will be determined by a special wasteload allocation study undertaken by the state. The study has been approved in rough concept by E.P.A., but the 205-J money needed for the study has not yet been released by E.P.A. If these funds are not received this year by the state, then the wasteload allocation study will have to be postponed until 1983 funds are received.

3. Community Septic Suitability Studies for Brandon.

No significant water quality problems have been identified which would justify the expenditure of funds for serving septic tank areas. Therefore, the 201 consultant will evaluate each area now on septic tanks to determine the need for service. Monitoring of nitrate levels in area water supply wells will continue to identify any future build-up which would necessitate the need for sewer service. If that sewering is deemed necessary, then the Brandon Study Area will at that time be eligible for federal funding.

4. Site specific biological and archaeological studies will have to be carried out along interceptor lines where necessary. Where possible the recommendations presented in the Draft EIS and Technical Reference Document No. 2 will be followed in locating the interceptor lines. Also, the

federal funding eligibility of the various interceptor projects will be subject to the implementation of the new Clean Water Act Amendments.

3.0

CHANGES TO THE DRAFT

1. Flows Eligible for Federal Funding.

A. Tampa Service Area

Revised design flows upon which E.P.A. eligibility is based has been computed for the Tampa Service Area. Current E.P.A. regulation changes have revised the original estimates for industrial flow eligibility. Therefore, the total eligible flow for Tampa Study Area has been reduced from 96 MGD to 78 MGD. The difference in costs associated with these changes will be assessed at a later date.

B. Brandon Study Area

Revised design flows upon which E.P.A. eligibility is based have been computed for the Brandon Study Area. The original flows were based on the projections of the Horizon 2000 land use plan. Current E.P.A. regulation changes have revised the original estimates for industrial flow eligibility. Therefore, the total eligible flow for the Brandon Study Area has been reduced to 7.11 MGD from the previous estimates of 9.72 MGD. This reduction in flow will not result in any phasing changes for the Brandon Study Area. Although, any difference in funding will have to be made up on a local level, if future industrial expansion warrants any capacity changes.

The following alternative cost changes will result from this reassessment of total eligible flow:

	B1		B3	
ALTERNATIVE DESCRIPTION	SEC. + NIT. ORIGINAL	ALAFIA REVISED	SPRAY IRRIGATION ORIGINAL	REVISED
Capital Cost	62,757,580	17,864,910	69,552,430	22,748,140
Annual O. and M.	1,073,820	560,300	405,360	75,370
Total P.W.	71,191,960	21,925,640	69,212,360	18,861,100

C. Riverview-Gibsonton Study Area

Revised design flows upon which E.P.A. eligibility is based have been computed for the Riverview-Gibsonton Study Area. The original flows were based on the projections of the Horizon 2000 land use plan. Current E.P.A. regulation changes have revised the original estimates for eligible industrial flow. Therefore, the total eligible flow for the Riverview-Gibsonton Study Area has been reduced to 2.56 MGD from previous estimates of 5.83 MGD. This reduction in flow will not result in any phasing changes for the Riverview-Gibsonton Study Area. Although, any difference in funding will have to be made up on a local level, if future industrial expansion warrants any capacity changes. The following alternative cost changes will result from this reassessment of total eligible flow:

ALTERNATIVE DESCRIPTION	CAPITAL COSTS	ANNUAL O. AND M.	TOTAL P.W.
R6-1 SEC. + NIT. Alafia			
Original	38,882,800	603,500	43,093,040
Revised	27,230,090	355,090	27,398,360
R6-4 Sec Spray Irrigation			
Original	41,805,790	200,000	40,812,940
Revised	27,991,710	183,040	25,440,090
R6-7 Sec Spray Irrigation			
Original	42,991,860	59,640	40,031,190
Revised	29,646,710	63,920	25,452,810

2. Sludge process at Hookers Point

A more cost effective alternative was developed to meet EPA regulations concerning sludge treatment and disposal at the Hookers Point facility. The new process is an anaerobic system of sludge management. The system will involve anaerobic digestion of primary and biological step sludges. The digested sludge will be dewatered by a combination of belt filters and air drying on open sand beds. Methane produced from the anaerobic process will be used to generate electricity for the treatment plant. This will enable the City to realize significant energy savings and decreased costs for operation and maintenance. Sludge is made available for sale to orange growers in the area for disposal in orange groves. Past demand for the sludge has exceeded plant production. Future demand is expected to continue to be greater than production. A more complete description of the new sludge management facilities is found in the Appendix.

4.0

PUBLIC PARTICIPATION

The establishment of a Citizen's Advisory Committee was an important aspect of the Environmental Impact Statement (EIS) Public Participation Program. They provided the information necessary to identify a preferred alternatives specific functions and duties of the group is found in the DEIS.

The Draft Environmental Impact Statement (DEIS) was published in August 1981 and made available to the Council on Environmental Quality and the public. A public notice appeared in the local newspapers. The Federal Register dated September 25, 1981, announced the availability of the DEIS. The DEIS was provided to numerous Federal, State, and local agencies as well as concerned individuals, interest groups, and public officials.

The public hearing was held in Tampa, Florida, November 18, 1981 and was attended by 20 participants. The comment period on the DEIS remained open through November 30, 1981. In addition to the public input afforded by the hearing (transcript provided herein), a number of letters were received during the comment period and are included in this Final EIS.

The designations in the margins of the letters (W-1 thru W-15) identify those specific comments for which responses have been developed. These responses follow the letters. Any concerns raised in the hearing transcript were previously addressed in responses to the letters so there will be no responses made following the transcript.

4.1 WRITTEN COMMENTS

4-3

FLORIDA GAME AND FRESH WATER FISH COMMISSION

THOMAS L. HIRES SR.
Chairman, Tampa

C. TOM RAINEY D.V.M.
Vice Chairman, Miami

CECIL C. BAILEY
Jacksonville

R. BERNARD PARRISH JR.
Tallahassee

WILLIAM G. BOSTICK JR.
Winter Haven

ROBERT M. BRANTLY, Executive Director
F. G. BANKS, Assistant Executive Director

October 26, 1981

Mr. John E. Hagen, III
Chief, EIS Branch
EPA Region IV
345 Courtland St., N.E.
Atlanta, Ga. 30365

Re: Central Hillsborough County
201 Area Environmental
Impact Statement

Dear Mr. Hagen:

The Office of Environmental Services of the Florida Game and Fresh Fish Commission has reviewed the referenced Environmental Impact Statement (EIS) and offers the following comments.

The recommendations of the EIS parallel the preferred treatment and disposal alternatives described in the Central Hillsborough County 201 Facilities Plan Study Memoranda. We submitted comments on the Study Memoranda (29 August 1980, letter enclosed) and find that our concerns regarding fresh water discharges to Tampa Bay and suitability studies of spray irrigation sites remain to be reviewed. Presumably, these concerns will be addressed in the ongoing waste load allocation survey and through preliminary review of potential spray irrigation sites. Both of these issues, however, should be included as elements of the Final Environmental Impact Statement.

The County Service Areas of Deltona and Thonotosassa were not addressed in the Study Memoranda; however, we have no objection to the no action alternatives proposed in the EIS.

Sincerely,

Robert M. Brantly

Colonel Robert M. Brantly
Executive Director

RMB/AG/rs

4-4

FLORIDA GAME AND FRESH WATER FISH COMMISSION

R. BERNARD PARRISH JR
Chairman, Tallahassee

GEORGE G. MATTHEWS
Vice Chairman, Palm Beach

DONALD G. RHODES, D.D.S.
West Eau Gallie

NELSON A. ITALIANO
Tampa

CECIL C. BAILE
Jacksonville

ROBERT M. BRANTLY, Executive Director
H. E. WALLACE, Assistant Executive Director

August 29, 1980

Mr. Ron Fahs, Director
Intergovernmental Coordination
Office of Planning and Budgeting
Executive Office of the Governor
The Capitol
Tallahassee, Florida 32301

Re: SAI 80-0927, Central Hillsborough
County, 201 Facility Plan

Dear Mr. Fahs:

By letter (enclosed) on 28 January 1980, the Office of Environmental Services of the Florida Game and Fresh Water Fish Commission reviewed the study memoranda prepared for the Central Hillsborough County 201 Facilities Plan. At that time we were critical of the lack of environmental data supporting selection of the preferred alternatives. An impact analysis has since been submitted for our review, including description and ecological evaluation of various disposal alternatives. Our comments address the environmental consequences of the preferred alternatives.

The major element of the Central Hillsborough 201 Facilities Plan involves routing the Tampa, Deltona and Thonotosassa service areas to the Hookers Point sewage treatment plant. Treatment capacity at the plant would be increased from the current 60.0 MGD (million gallons per day), AWT (advanced waste treatment), to 98.38 MGD, AWT, with continued effluent discharge to Tampa Bay. Waste load allocations were established via modeling analyses, and the plan is in accordance with the Wilson-Grizzle Act which requires that all discharges to surface waters in the Tampa Bay Region require treatment in excess of secondary processes.

Although we are generally opposed to surface water discharge of
sewage effluents, the volume of wastewaters generated by the Tampa
service areas precludes more environmentally desirable alternatives. W-1
Our primary concern regarding this plan is the potential impact of 100
MGD discharges of fresh water to Tampa Bay. Seagrasses, as noted in the
environmental analysis of this plan, are sensitive to lowered salinities.

Thus, while modeling analyses indicate that nutrients, DO (dissolved oxygen) and BOD (biochemical oxygen demand 5-day; would remain stable, altered salinity regimes may cause alterations in the faunal and floral composition of the estuary. To evaluate this potential, we recommend that salinity regimes generated by the current 60 MGD discharge be monitored and that a modeling analysis be conducted to predict salinity patterns for 100 MGD discharges. If low salinity currents would pose a threat to seagrass beds or other elements of the Tampa Bay system, alternate discharge locations or effluent spreader systems should be considered.

The Facilities Plan provides a 9.63 MGD treatment plant for the Brandon service area. Secondarily treated effluent would be discharged to spray irrigation sites including portions of the sewage treatment plant site, two golf courses and a citrus grove. The treatment plant site includes 40 acres of citrus grove, cypress forest, oak hammock, pine flatwoods, and bay head forests.

Our primary concern with this alternative involves the extent to which the plan will affect sand pine-oak scrub habitat. These sensitive scrub associations provide habitat necessary to the survival of several species recognized by the Florida Game and Fresh Water Fish Commission as threatened (T) or of special concern (SC). Sand pine-oak scrub habitats within the spray irrigation sites should be surveyed to establish the presence of the following species: Florida gopher frog (SC), gopher tortoise (SC), eastern indigo snake (T), Florida scrub jay (T), Florida burrowing owl (T), and Florida mouse (T). Any tracts found to support these species should be protected from alteration by spray irrigation. W-2
Wetland tracts may also be unsuitable as spray irrigation sites. High ground water tables limit nutrient removal, and stabilized water regimes can destroy wetland communities. Therefore, although we encourage spray irrigation as a desirable alternative to surface water discharge, we recommend that spray irrigation acreages be provided and an environmental assessment of these tracts be conducted to determine impacts on native communities. A stormwater management plan which provides for adequate retention of effluents should also be prepared for golf course spray irrigation sites.

To minimize the potential for surface water degradation and to maximize vegetative assimilation of nutrients, we strongly recommend that the monitoring provisions and retention pond systems discussed on pages 7-14 and 7-15 of the Environmental Assessment be formally adopted into the Facilities Plan for the Brandon service area.

The final section of the Central Hillsborough Facility Plan recommends that the Riverview/Gibsonton service areas be connected to the South Hillsborough County Regional plant currently under construction. The 5.85 MGD generated by the Riverview/Gibsonton service areas would require considerable expansion of the 1.5 MGD South County plant. This plant, without these additional service areas, is scheduled to be expanded to 3.0 MGD by 1981, and 6.3 MGD by 1986. The South County plant is designed to provide secondary treatment with reuse by the Tampa Electric Company

(TECO) generating plant at Big Bend, and spray irrigation of golf courses, TECO right-of-ways, and agricultural properties. The phosphate industry has also expressed interest in receiving treated effluents for processing plants.

The South Hillsborough County Facilities Plan is innovative in its practical application and reuse of wastewater effluents. The disposal alternatives could conserve ground waters and provide economic as well as environmental benefits by recycling nutrients. However, nutrients contained in secondarily treated effluents can seriously degrade surface waters without careful application and monitoring programs. To minimize the risk to wetlands and sensitive uplands we recommend that an environmental impact analysis of the various spray irrigation sites and effluent reuse alternatives be prepared. This study should take into account the considerably larger areas necessary for spray irrigation under the proposed plan, and should address potential problems resulting from industrial reuse. W-3

In summary, transmission and collector system construction impacts are well documented, and mitigative measures referenced in the Environmental Assessment should be strictly adhered to. Given existing non-point nutrient loads to Tampa Bay, these discharges of high quality wastewater effluent should not appreciably accelerate eutrophication of the Bay, although monitoring programs should be implemented to document any such trends. The possibility of salinity regime alteration does exist, however, and should be evaluated. Also, potential spray irrigation sites for the Brandon and South Hillsborough County-Riverview/Gibsonton service areas should be examined to determine potential impacts upon sensitive native habitats and legally protected species.

Please call me if we can be of further assistance.

Sincerely,

H. E. Wallace
Assistant Executive Director

249/rs3/1-3
AG

Florida Department of Transportation

Haydon Burns Building 605 Suwannee Street Tallahassee, Florida 32301 Telephone (904) 488-8541

BOB GRAHAM
GOVERNOR

JACOB D. VARN
SECRETARY

October 22, 1981

Mr. John E. Hagan, III, P. E.
Chief, EIS Branch
Environmental Protection Agency
Region IV
345 Courtland Street, N. E.
Atlanta, Georgia 30365

Dear Mr. Hagan:

Subject: DEIS Review
Central Hillsborough County
Tampa Area, Wastewater Facilities

In order for us to adequately assess the possible effects of the proposed project on Hillsborough County's transportation system, some additional information is necessary.

Specifically, we need to know what, if any, will the impacts to the transportation system be. Will the proposed alternatives necessitate disturbing any existing roadbeds or disruption of traffic service. Provisions for handling emergency vehicles need to be addressed. W-4

The mitigation section should include ways to resolve any potential problems.

We appreciate the opportunity to comment.

Sincerely,

C. L. Irwin

C. L. Irwin, Administrator
Environmental Impact Review

CLI/mnb

ENVIRONMENTAL IMPACT STATEMENT
BRANCH
RECEIVED
OCT 26 1981
REGION IV - EPA

DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

DEPARTMENT OF THE AIR FORCE
REGIONAL CIVIL ENGINEER, EASTERN REGION (HQ AFESC)
526 TITLE BUILDING, 30 PRYOR STREET, S.W.
ATLANTA, GEORGIA 30303

REPLY TO ATTN OF: ROV2

26 October 1981

SUBJECT: Environmental Impact Statement (EIS), Central Hillsborough County - Tampa Area, Florida

TO: U. S. Environmental Protection Agency
Region IV
Attn: Mr. John E. Hagan, III, P. E.
Chief, EIS Branch
345 Courtland Street, N. E.
Atlanta, Georgia 30365

1. We have reviewed the subject EIS and find that development of the project will have no adverse impact on Air Force operations at MacDill AFB, Florida.

2. Thank you for the opportunity of reviewing this EIS. Our point of contact is Mr. Winfred G. Dodson, commercial telephone number 221-6821/6776.

THOMAS D. SIMS
Chief
Environmental Planning Division

Cy to: USAF/LEEV
TAC/DEEV
56 CSG/DEEV

ENVIRONMENTAL IMPACT STATEMENT BRANCH
RECEIVED
OCT 27 1981
REGION IV - EPA

tampa bay
regional
planning
council

9455 Koger Boulevard
St Petersburg FL 33702
(813) 577-5151/Tampa 224-9380

November 3, 1981

Mr. John E. Hagan III, P.E.
Chief, EIS Branch
EPA, Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30365

Reference: A-95 Review Central Hillsborough-Tampa
201 Facilities Plan EIS TBRPC #49-81

Dear Mr. Hagan:

Enclosed are comments regarding above referenced project recently received from the City of Tampa. Please note that the Bureau of City Planning now finds the alternatives to be "reasonable, appropriate and consistent with local plans."

If I may be of further assistance, do not hesitate to call.

Sincerely,

Vicki Adelson

Vicki Adelson
A-95 Coordinator

VA/gr

Enclosure

DAMES & MOORE
LAKELAND
CPG ___ TMG ___
JHP ___ CG ___
MA ___ PLM ___
LCM ___ SEB ___
KJR ___ TM ___
RFC ___
DEC 14 1981
ARM ___ BLO ___
FILE ___ ACCT ___

ENVIRONMENTAL IMPACT STATEMENT
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REGION IV - EPA

Chairman Frederick Allen
Councilman City of Gulfport

Vice Chairman Jim Platt
Commissioner Hillsborough County

Secretary/Treasurer Jeanne Malchon
Governor's Appointee Pinellas County

W.A. Ockunzzi
Executive Director

Bradenton • Clearwater • Dade City • Dunedin • Gulfport • Hillsborough County • Largo • Manatee County • New Port Richey • Oldsmar • Palmetto • Pasco County • Pinellas County • Pinellas Park • Safety Harbor • St. Petersburg • St. Petersburg Beach • Sarasota • Tampa • Tarpon Springs

CITY OF TAMPA

Bob Martinez, Mayor
Department of Revenue and Finan

Bureau of City Planning

October 27, 1981

Mr. Mike McKinley, Chief
Governmental Services Division
Tampa Bay Regional Planning Council
9455 Koger Boulevard
St. Petersburg, FL 33702

Dear Mike:

Re: A-95, 49-81, Central Hillsborough-Tampa 201 Facilities Plan EIS

As per our telephone conversation, the Bureau of City Planning submits the following comments regarding the 201 EIS:

- The City of Tampa and the Deltona Corp. have agreed to the provision of Sanitary Sewerage for the Deltona development. This agreement is consistent with the "No Action" alternative, in that Federal funds will not be utilized to encourage development in what may be considered wetlands. Further, Federal funds will not be utilized to provide services where point source water quality problems do not presently exist. Reference to the agreement could be made as a footnote in the executive summary.

- A somewhat peripheral, but important issue, concerns the utilization of on-site, individual wastewater treatment and disposal systems, specifically, septic tanks. Although the septic tank needs very little routine maintenance, periodic removal of sludge solids is essential to maintain adequate liquid detention time. As sludge builds up, sludge scouring increases, treatment efficiency drops, and more solids escape through the outlet. Excessive solids leaving the tank result in the failure of the disposal system.

  Thus, periodic sludge removal is necessary. It is essential that environmentally secure disposal sites for the pumped septage are available to the various septage haulers. Failure to dispose of septage in approved sites may lead to clandestine dumping, in areas where such activities should not occur. Perhaps this issue

Mr. Mike McKinley, Chief
October 27, 1981
Page Two

should also be addressed. Generally, the Bureau of City Planning has tracked and participated in the 201 planning process. The Alternatives selected are reasonable, appropriate, and consistent with local plans. W-5

If I may be of further assistance, do not hesitate to call.

Sincerely,

Kevin McConnell

Kevin McConnell
Housing and Urban Development Coordinator

/gh

COUNTY COURTHOUSE
P.O. BOX 1110
TAMPA, FL 33601
TEL. (813) 272-5940

HILLSBOROUGH COUNTY CITY-COUNTY PLANNING COMMISSION

RONALD N. SHORT
EXECUTIVE DIRECTOR

JOE CHILLURA, JR.
CHAIRMAN
ROBERT EDWARDS
VICE CHAIRMAN
DR. GORDON BRUNHILD
MEMBER AT LARGE
HENRY C. BROWN
DR. ROBERT CATLIN
MANUEL FERNANDEZ
WARREN JOHNSON
BARBARA MYRES
FITZ RAWLS, JR.
WILBERT WILLIAMS

September 30, 1981

Mr. Michael R. McKinley, Chief
Governmental Services Division
Tampa Bay Regional Planning Council
9455 Koger Boulevard
St. Petersburg, Florida 33702

Re: Central Hillsborough-Tampa 201 Facilities Plan E.I.S.

Dear Mike:

The Hillsborough County City-County Planning Commission was represented on technical committees for this planning activity where our input was received. The Planning staff supports the Plan and the EIS information. Please phone me at 272-5940 if questions arise.

Sincerely,

Keith Waller

Keith Waller

KW/rh

xc: Pickens Talley
Howard Curran

ENVIRONMENTAL IMPACT STATEMENT BRANCH
RECEIVED
OCT 28 1981
REGION IV - EPA

A CITY-COUNTY AGENCY SERVING THE CITIES OF TAMPA, PLANT CITY, TEMPLE TERRACE AND THE COUNTY OF HILLSBOROUGH
AN AFFIRMATIVE ACTION — EQUAL OPPORTUNITY EMPLOYER

A-95 #49-81; Central Hillsborough-Tampa 201 Facilities Plan EIS, Hillsborough County

CLEARINGHOUSE REVIEW

The Environmental Protection Agency has requested review and comment on a draft Environmental Impact Statement for proposed wastewater facilities for the cities of Tampa and Temple Terrace and adjacent unincorporated areas of Hillsborough County.

Local Comments Requested From:

Hillsborough County City-County Planning Commission: See attached letter dated September 30, 1981.

City of Tampa Planning Department: Telephoned general concurrence, will submit written comment

City of Temple Terrace: Telephoned concurrence October 22, 1981.

Council Comments and Recommendations

The draft EIS presents several alternatives for collection treatment and disposal of wastewater for each service area. Preferred alternatives are provided representing EPA's consideration as the most feasible approach to providing the necessary waste treatment services with the least impact on the environment and at an economical cost. These alternatives are consistent with the Council's Areawide Water Quality Management Plan and the Council's adopted growth policy, Future of the Region, which encourages the treatment of domestic sewage in the most cost-effective manner with maximum pollution abatement.

However, the Deltona Study Area includes the Tampa Palms development approved last year by Hillsborough County which is estimated to ultimately generate 3.645 million gallons of wastewater per day (mgd). The preferred "no action" alternative of the EIS states that development in this wetland and floodplain area should not be encouraged and that the developer should assume the costs of the collection facilities and pay the incremental cost of expanding the Hookers Point treatment capacity for 1.3 mgd wastewater flow. These proposed conditions would require concurrence from the City of Tampa and the Deltona Corporation which the study does not address. W-6

This EIS is regionally significant and no regional concerns have been identified during the review which would preclude its approval. However, it is recommended that the final EIS include concurrence from the City of Tampa and the Deltona Corporation on the proposed conditions for the Deltona Study Area. Further, it is recommended that any additional comments addressing local concerns be considered prior to completion of the final EIS.

Committee adopted October 26, 1981.

George C. McGough

Commissioner Jan Platt, Chairman
Clearinghouse Review Committee

Please note: Unless otherwise notified, action by Clearinghouse Review Committee is final. Append copy to application to indicate compliance with clearinghouse requirements. Comments constitute compliance with OMB Circular A-95 only.

tampa bay regional planning council
9455 Koger B[illegible] (813) 57[illegible] [illegible] 9380

United States Department of the Interior
OFFICE OF ENVIRONMENTAL PROJECT REVIEW
Southeast Region / Suite 1384
Richard B. Russell Federal Building
75 Spring Street, S.W. / Atlanta, Ga. 30303

DAMES & MOORE
LAKELAND
CPG ____ TMG ____
JHP __ CG __
MAL __ DEC 10 1981 PLM __
LJM __ SEB __
KJR __ TM __
RFC __
ARM ____ BLQ ____
FILE ____ ACCT ____

November 17, 1981

ER-81/2070

Mr. John E. Hagan, III, P.E.
Chief, EIS Branch
EPA, Region 4
245 Courtland Street, NE
Atlanta, Georgia 30365

Dear Sir:

We have reviewed the Draft Environmental Statement, Wastewater Facilities, Tampa area, and portions of Central Hillsborough County, Florida, and have the following comments.

The proposed project will not adversely affect any existing, proposed, or known potential units of the National Park System. Given the enormous scope and size of this project, it is difficult to determine from the draft environmental statement if local recreation areas of our mandated interest or jurisdiction will be impacted by the project. We encourage continued coordination with the city of Tampa and Hillsborough County in your future planning efforts so as to eliminate or mitigate any possible adverse impacts. Additionally, we encourage continued coordination with the State Historic Preservation Officer.

We suggest that a discussion be included on the effects that the proposed wastewater facilities would have on the local mineral industry; at least eight active phosphate mines and two peat prospects are within the study area boundaries. Although the proposed wastewater facilities may have no direct effect on mining, a section in the environmental statement discussing this mining activity, plus a statement regarding the possible impacts on in-the-ground phosphate and peat resources resulting from project implementation, should be presented. W-7

The environmental sections, for the most part, appear to contain adequate information regarding the description and discussion of fish and wildlife resources in the project area. The impacts of suburban sprawl on wetlands and fish and wildlife habitat have been adequately addressed. Any wastewater treatment plan developed in the Central Hillsborough County area will affect these resources to the extent that it encourages or promotes development in wetlands and results in discharge to creeks and lakes in the vicinity.

Numerous new developments are already planned and some are currently being developed in this study area. A large portion of wetlands within this area is not within the Corps of Engineers jurisdiction under Section 404 of the Clean Water Act of 1977. Unless controlled by State or local agencies, these areas are likely to be developed. It is hoped that State and local governments realize that drainage of such wetlands from development can result in a degradation of an area's water quality and a reduction of fish and wildlife habitat.

An adequate discussion of existing rare and endangered species in the project area is contained in Chapter IV, Part B-11, (page 32). However, an analysis of the probable effect of the proposed project on these species is completely side-stepped in Chapter IV, Part D-1, (page 68) "Impacts on the National Environment." W-8

We find inconsistencies between the section entitled "Surface Ecosystems" (page IV-73), and the section entitled "Rare and Endangered Species" (page IV-74). The latter section discusses all rare and endangered species by stating that "urbanization of the study area is projected to occur with or without improved wastewater facilities." The previous section discusses adverse impacts which will occur to the environment as a result of development pressures. W-9

In particular, wetlands and rare and endangered species in the Deltona region are expected to be negatively affected by sewer operations in the area. Even though development of the area may occur without federally funded sewerage facilities, it would probably occur at a greatly reduced density and rate.

We believe the draft environmental impact statement is deficient in identifying probable impacts to the natural resource, particularly to rare and endangered species, which will result from project implementation as opposed to the growth scenario without the project. Many wildlife species are tolerant of some level of human disturbance which may depend on the density and extent of habitat disturbance. Therefore, the ultimate intensity of development has a direct relationship to the level of wildlife disruption and elimination. The document should more specifically identify impacts to wildlife "with" and "without" the project.

The statement should more thoroughly evaluate the possibility of ground water impacts from the proposed use of spray irrigation for effluent disposal in the Brandon Study Area and discuss any appropriate mitigation. It is stated that Brandon is located in a recharge area for the Floridian Aquifer (e.g.., p. IV-24, IV-72, IV-73, IV-78) and that septic tank use and package plants have already resulted in some nitrate pollution of ground water (p. I-5). Thus the possibility of inadequate uptake of nitrates or other pollutants by vegetation and the resultant contamination of ground water should be more carefully considered. The degree of monitoring needed for spray irrigation in the Brandon area should be addressed. W-10

4-16

Thank you for the opportunity to comment on this statement.

Sincerely,

James H. Lee

James H. Lee
Regional Environmental Officer

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SAJPD-ES c

18 November 1981

Mr. John E. Hagan III, P.E.
Chief, EIS Branch
Environmental Protection Agency, Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30365

Dear Mr. Hagan:

The Corps of Engineers has reviewed the Draft Environmental Impact Statement on the Central Hillsborough-Tampa, Florida Wastewater Facilities Plan and has no comment.

Thank you for the opportunity to review and comment on this Draft Environmental Impact Statement.

Sincerely,

A. J. SALEM
Acting Chief
Planning Division

DEPARTMENT OF HEALTH & HUMAN SERVICES 4-18

Public Health Service

Centers for Disease Control
Atlanta, Georgia 30333
(404) 262-6649

November 20, 1981

Mr. John E. Hagan, III, P.E.
Chief, EIS Branch
Environmental Protection Agency
Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30365

Dear Mr. Hagan:

We have completed our review of the Draft Environmental Impact Statement (EIS) for Central Hillsborough County - Tampa, Florida, Wastewater Facilities. We are responding on behalf of the Public Health Service.

Alternatives that result in the sewering of rural areas may contribute to urban expansion. However, it is noted that population growth with or without the project will be considerable. In this regard, we concur that the phasing of wastewater facilities to meet the needs as described in the preferred alternative is most acceptable.

Our greatest concern relates to the spray irrigation of effluent. In addition to proper site selection, installation, operation and maintenance, the operator should establish an appropriate on-going monitoring regimen to ensure that these practices do not become significant adverse impacts on groundwater. We note that the preferred alternative provides a beneficial impact on groundwater when compared to use of septic tanks. W-11

Regarding the mitigation measure of minimizing open burning during construction activities, we suggest that the local ordinances be reviewed and appropriate permits sought before any open burning occurs.

Thank you for the opportunity to review this document. We would appreciate receiving a copy of the final when it becomes available. If you should have any questions about our comments, please contact Mr. Ken Holt of my staff.

Sincerely yours,

for Chester L. Tate, Jr

Frank S. Lisella, Ph.D.
Chief, Environmental Affairs Group
Environmental Health Services Division
Center for Environmental Health

[illegible]
NOV 24

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

November 20, 1981

Mr. John E. Hagan, III, P.E.
Chief, EIS Branch
U.S. Environmental Protection Agency,
Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30365

Re: C120634010 (Step 1) - Hillsborough County
Draft Environmental Impact Statement

Dear Mr. Hagan:

he draft Environmental Impact Statement for the Central Hillsborough County-ampa Area has been reviewed by the Department of Environmental Regulation (DER). he following comments are offered:

1) Sludge treatment and disposal has not been addressed. W-12

2) There appears to be some misunderstanding regarding wasteload allocation work in Tampa Bay and Hillsborough Bay. There is no wasteload allocation study ongoing at this time. However, the impact of non-point source contributions is being assessed by the DER. W-13

f you have any questions regarding these comments, please call Ms. Cathie Cash t 904/488-2582.

incerely,

ichard W Smith

ichard W. Smith, P.E., Chief
ureau of Wastewater Management and Grants

WS/ccm

c: Walter Kolb - Governor's Office
Robert Jourdan - EPA
David Peacock - EPA
John Outland - DER
Gene Sullivan - DER/Tampa
Howard Curren - City of Tampa
Joseph Clark - Hillsborough County

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TAMPA BASIS BAY AREA SCIENTIFIC INFORMATION SOCIETY

Organizers
J.L. Simon
R.R. Lewis
E.D. Estevez
S'K. Mahadevan
C.R. Goodwin

Please Respond To: TAMPA BASIS
c/o P. O. Box 24748
Tampa, FL 33623

November 23, 1981

John E. Hagan III, P.E., Acting Chief
Environmental Assessment Branch
U.S. Environmental Protection Agency
Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30365

Re: Central Hillsborough County Tampa Wastewater Management
Environmental Impact Statement

Dear Mr. Hagan:

I recently testified at the public hearing on the above DEIS.

I am very concerned, as are many scientists in the Tampa area who were unable to attend the public hearing, with the lack of discussion in the DEIS of the historical problems of eutrophication in Hillsborough Bay (FWPCA Report 1969 - "Hagan Report"), and the fact that these problems appear to be still present even after the AWT plant has been in operation.

I recently reported to the City of Tampa that we had collected an algae sample near your transect T8 (FWPCA 1969) (see attached map) on 30 January 1981 in conjunction with a manatee feeding study. The analysis of the sample is listed in Table 1. These figures work out to over 16,000 pounds/acre dry weight of algae, and the fact that 95% of the sample is one species of Gracilaria fits well with your report of 98% of the algae in Hillsborough Bay being Gracilaria (p. 32 FWPCA, 1969). I might add that these mats of algae extended for several miles parallel to the coastline north of our sample site and our sample was not in an isolated patch.

I think my point is obvious. If the AWT plant is doing what is was designed to do, why is it that the historical algal populations appear unchanged? Before we invest millions more in expensive sewage technology, W-14

John E. Hagan III, P.E., Acting Chief
November 23, 1981
Page Two

I believe it is important to ask ourselves again why we are treating sewage to the degree we are and is it enough? too much? or not enough? I am well aware of the City of Tampa's Primary Productivity Study (City of Tampa 1981) and Howard Rhodes' paper discussing the "water quality" improvements apparently due to the AWT plant. (Rhodes undated). But the "water quality" improvements don't mean anything unless the ecosystem shows signs of recovery from stress. I submit that the marine ecosystem of Tampa Bay is still under stress, particularly in Hillsborough Bay, and that we must determine what is going on before we throw more money at the problem.

Paul Traina told me at the public hearing that once a "wasteload allocation" is determined for the bay that we might have some answers. My experience with "wasteload allocation" studies is that they are heavy on the "magic" numbers and computer simulations and very, very light on the real physical, chemical, and biological characteristics of the ecosystem in question. I sincerely hope this "waste allocation" study for Tampa Bay is better than the rest I have seen. There are real marine organisms in Tampa Bay that are stressed by continuing problems of urban runoff, sewage effluent disposal and dredging.

Your assistance in helping us solve these problems is imperative.

Sincerely yours,

Roy R. Lewis III

Roy R. Lewis, III
Marine Biologist

cc: Dr. Joseph Simon, USF
    Dr. William K. Fehring, TPA
    Dr. Richard Garrity, City of Tampa
    Richard G. Wilkins, HEPC
    William Hennessey, FDER
    Don Moores, FDER
    Howard L. Rhodes, FDER
    Ms. Sally Thompson, HEC
    Roger B. Anderson, TBRPC
    Dr. Clinton Dawes, USF
    David Carpenter, City of Tampa
    Gil Klein, Tampa Tribune

Literature Cited

City of Tampa. 1981. Final report of the Hillsborough Bay water quality monitory program. No page numbers.

Federal Water Pollution Control Administration. 1969. Problems and management of water quality in Hillsborough Bay, Florida. 48 pp and appendices.

Literature Cited, Cont.

Rhodes, H.L. undated. Municipal treatment requirements and practices to maintain water quality in the Tampa and Escambia Bay areas. Florida Department of Environmental Regulation. 84 pp.

RRL/na

Attachments

ENVIRONMENTAL IMPACT STATEMENT
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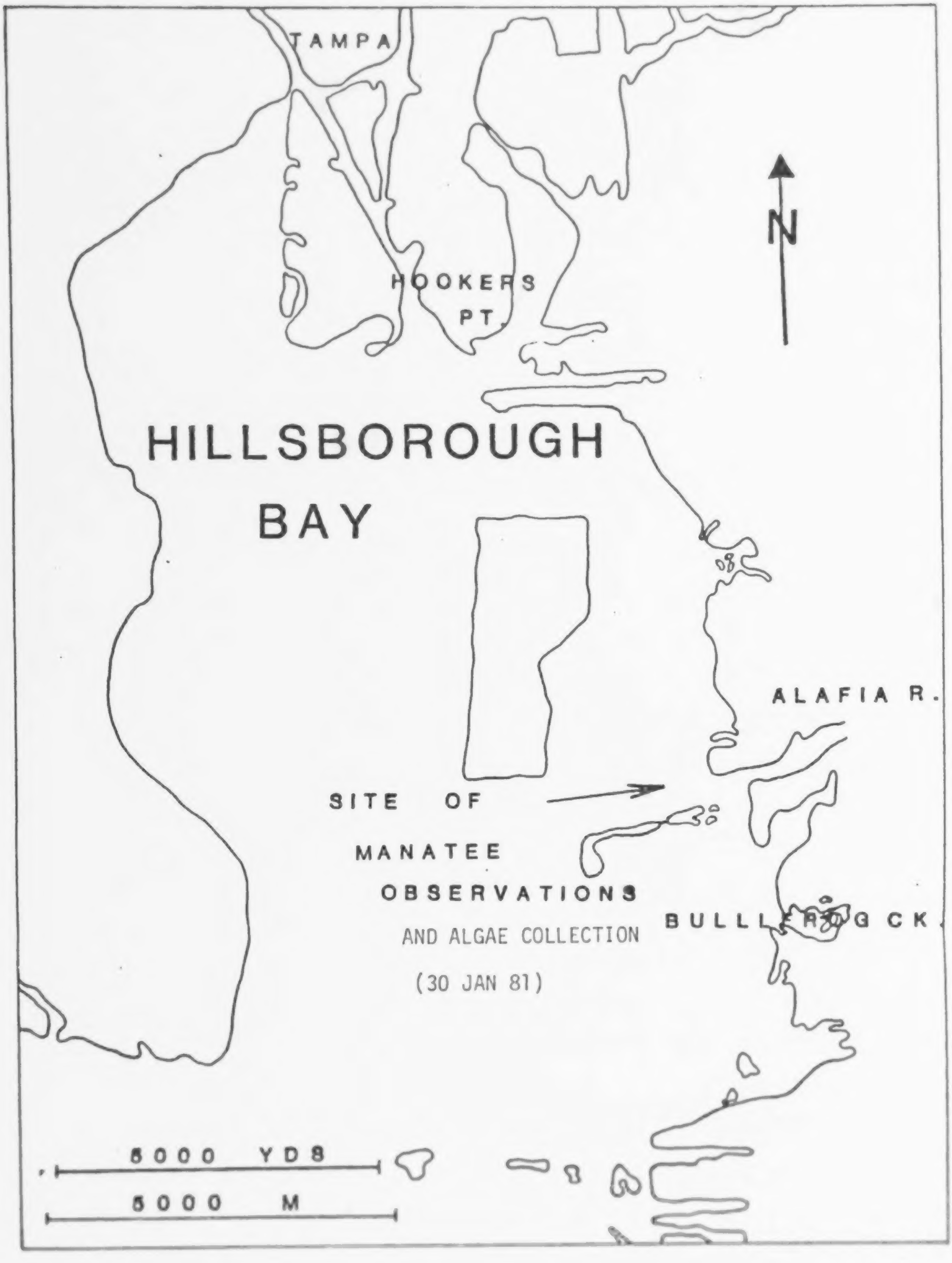
TAMPA
HOOKERS PT.
N
HILLSBOROUGH BAY
ALAFIA R.
SITE OF MANATEE OBSERVATIONS
AND ALGAE COLLECTION
(30 JAN 81)
BULLFROG CK.
5000 YDS
5000 M

Table 1. Mean Dry Weights by Species of Collected Algae (N=5), Alafia River mouth, Tampa Bay, Florida (30 JAN 81)

Species	(g) Dry weight / m^2 ($\bar{x}$)	(sd)
Ulva lactuca Linnaeus	88.77	48.66
Gracilaria verrucosa Hudson	1714.80	264.79
Chaetomorpha linum Muller (Kutzing)	0.93	---

The Deltona Corporation

EXECUTIVE OFFICES: 3250 S.W. THIRD AVENUE · MIAMI, FLORIDA 33129

ROBERT JAMES MOTCHKAVITZ, P.E.
Director of Environmental Services

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November 27, 1981

Mr. John E. Hagan, III, P.E., Acting Chief
Environmental Assessment Branch
U.S. Environmental Protection Agency
Region IV
345 Courtland Street N.E.
Atlanta, Gerogia 30365

RE: Central Hillsborough County/
Tampa Wastewater Management Plan
Environmental Impact Statement

Dear Mr. Hagan:

The following comments have been prepared in response to the draft of the Central Hillsborough County Tampa Wastewater Management Environmental Impact Statement (EIS). Notwithstanding the contents of this letter, The Deltona Corporation reserves the right to submit further written comments, as appropriate, and to appear and testify at any future public hearings held with respect to the above referenced EIS.

As you may be aware, The Deltona Corporation is the developer of a planned community in northern Hillsborough County known as Tampa Palms. The development will be located north of the present University of South Florida campus within the area referrred to in the EIS as the Deltona Service area. At completion, the Tampa Palms development will contain approximately 13,500 dwelling units as well as commercial and recreational facilities to serve the intended population. (See Map H enclosed.) The total land area of the development will be approximately 5,400 acres.

The area of Hillsborough County in which Tampa Palms will be located has been designated for suburban development according to the Hillsborough County Comprehensive Land Use Plan (Horizon 2000). The property was rezoned from an agricultural classification to a Community Unit District (multi-use) designation by the County in 1980 with allowable gross density of 2.5 units/acre. On October 19, 1980, the Board of County Commissioners approved Deltona's application for development approval pursuant to Chapter 380, Florida Statutes. The County's approval of the Tampa Palms development followed an intensive and all-pervasive review of the potential impacts of the community conducted by both Hillsborough County and the Tampa Bay Regional Planning Council. Comments were solicited and received from numerous state, regional and local agencies including the City of Tampa Public Works Department. In excess of 30 hours of public hearings were held to address all issues of significant concern. This review process gave special consideration to the potential impacts to the environment of the site and the adjacent Hillsborough River Flood Plain. It was Hillsborough's County position supported by recommendations from Tampa Bay Regional Planning Council, based on their review, that Deltona had adequately addressed any adverse environmental impacts, including any potential degredation of on-site wetlands, in the plan of development for Tampa Palms.

The Tampa Palms Development is a totally planned community to be constructed over a period of twenty years. The project is situated on 5408.5 acres and contains a wide range of residential dwelling types totalling 13,497 units over 1,651 acres or only 30.1% of the site. There are a full range of community support facilities planned to meet the needs of the residents of Tampa Palms. These include two school sites, 20 park sites, 6 church sites, two fire station sites, and two public facility sites, which total 300.5 acres or 5.8% of the site. Also planned are the Hillsborough River Golf and Country Club (one Championship Course) and Cypress Creek Golf and Country Club (two Championship Courses) totalling 486.9 acres of 9% of the site. The largest percentage of the site will be maintained in Open Space uses. These include the Hillsborough River Conservation Area, Cypress Creek Conservation Area, Rock Hammock Preservation Area, ponds and lakes, drainage retention areas, Cypress Creek Levee, and the landscaped roadway buffers totalling 2,533 acres, or 47% of the site. The Open Space Uses when combined with the parks and recreational facilities provide a total Open Space of 3,238.5 acres or over 60% of the site. The Employment Centers consist of neighborhood, community and regional shopping centers, hotel, business/commercial park, office, professional office park, and the research and development industrial park, totalling 248.5 acres or 4.7% of the site. The major arterials total 189 acres or 3.4% of the site.

Reference is made to Volume I of the Draft EIS which provided discussion and information relative to the environmental resources of the study areas. Included in that study, as a technical appendix, was a report by Dames and Moore, Atlanta which addressed the environment of Tampa Palms with specific interest devoted to wetlands and floodplains. To our knowledge that report was prepared in the early part of 1980 and has not been revised to reflect the following events which took place subsequent to its preparation:

1. In June, 1980 Hillsborough County adopted FEMA flood maps which in the vicinity of Tampa Palms, showed 100 year flood levels in no case greater than and in some cases (along the Hillsborough River) less than those used by Dames and Moore in predicting impacts of and to Tampa Palms.

2. As a condition of Hillsborough County's approval of Tampa Palms, Deltona has agreed to establish a comprehensive set of monitoring programs to assure future protection to wetlands and water quality. These on going programs include a study to measure wetland vitality in development areas versus control areas and an investigation to monitor both internal water quality as well as the quality of discharges from the site. These studies will insure that wetland conservation

areas will maintain their historic functions and contributions, and that the water quality of receiving bodies will not be further degraded after development as predicted by Deltona.

3. Final state approval, Governor and Cabinet endorsement, is forthcoming by year's and for the establishment of a Community Development District for Tampa Palms pursuant to Chapter 190, Florida Statutes.

Deltona's primary purpose in creating the district is to ensure that there will be consistent and professional management of the natural resource systems and other infrastructure systems not maintained by Hillsborough County or other governmental agencies. The district is required to employ competent professional engineers to manage these systems. Also, the district is provided with the necessary taxing and fund raising powers to ensure that sufficient funds will be available for the maintenance, repair, improvement and expansion of these systems as becomes necessary.

In view of the above facts, The Deltona Corporation would like to make the following comments with respect to the draft EIS.

1. Of the approximately 5,400 acres comprising the Tampa Palms development, only approximately 1900 acres will be used for the construction of residential dwellings and commercial structures. Approximately 1650 acres of wetlands, representing 84.1% of the total natural wetland areas, defined pursuant to the Florida Land Use and Cover Classification Systems, presently existing on the site, have been designated as conservation areas in the approved development plan. With respect to the approximately 300 acres of existing wetlands which are proposed to be eliminated, Deltona has agreed to mitigate such loss with construction of equivalent acreage of man-made wetlands, including lakes. Nearly 53 acres of the wetland areas proposed to be disturbed will be used in the construction of such lakes.

The Deltona Corporation contends that the EIS's conclusion that federal funding of wastewater treatment facilities which may service the Tampa Palms development will "encourage development in wetland and flood plain areas," is grossly misleading. The entire development plan of the Tampa Palms community is committed to the preservation of the great majority of existing wetlands in an area which has been targeted for reasonably intense development by the County's adopted Land Use Plan. The functions of the relatively small areas of wetlands proposed to be eliminated will be adequately replaced by man-made "wetlands". Based on substantial scientific evidence, there is no reason to believe that the post-development wetland system will not adequately filter out any developmental pollutants prior to such pollutants reaching the Hillsborough River. Conversely, pollutant load models have demonstrated that post-development pollutant loads will not exceed pre-development pollutant loads.

With regard to activities in flood prone areas, no residential development will take place along the Hillsborough River Flood Plain below the 25 year flood level. Based on the FEMA flood maps of this area only 98.6 acres of residential development along the River will be within the 100 year flood plain.

It is The Deltona Corporation's position that the Tampa Palms development will successfully insure that significant wetland degradation will not occur in the Hillsborough River Flood Plain area. It has been widely acknowledged that the designation of such large areas of potentially developable property as conservation areas is only possible where the land is developed as a major integrated community by an organization with Deltona's abilities. The ultimate realization of such a community will depend greatly on the establishment of reasonable provisions for adequate wastewater treatment.

2. It is important to note that the EIS concludes that a substantial amount of Hillsborough County's growth will occur in the unincorporated areas of the county. Couple this with the fact that Hillsborough County has planned for much of this growth to occur in the area containing the proposed Tampa Palms development, and the fact that significant development has already taken place directly to the south and west of the Tampa Palms property, and it is evident that the provision of wastewater facilities for the Deltona Service Area will not in itself, encourage urban sprawl. To the contrary, the provision of wastewater facilities will facilitate orderly growth in the area recognized by the County and the Regional Planning Council, most appropriate for such growth.

3. On May 20, 1980 The Deltona Corporation was granted a nationwide permit (33CFR 323,4-2) for development of Tampa Palms by the U.S. Army Corps of Engineers.

The Environmental Protection Agency was an active party to the Corps review process and, as such, presumably advised the Corps with respect to this permit approval. It is disconcerting to The Deltona Corporation, that the EPA chose to make no objection to the Tampa Palms development plan at that time. It is Deltona's contention that the reasoning which lead the EPA to approve the Corps' issuance of the nation-wide permit is no less valid in context of the EPA's review of the present EIS.

The EPA has, as recently as October, 1981, taken part in several scoping meetings with regard to the proposed Housing and Urban Development EIS for Tampa Palms (Title-X Financing) and again no adverse position to development activities was taken. Deltona requests that the EPA reconsider its apparent inconsistent positions, and reaffirm its stance that the proposed development of Tampa Palms will not result in a significant threat to the environmental resources of Hillsborough County.

4. A basic premise of the EIS is that the Deltona Service Area, is contained within the County Service Area (CSA) as opposed to the Tampa Service Area (TSA). EPA should be advised that pursuant to an intergovernmental agreement the City of Tampa has agreed with Hillsborough County to incorporate the Tampa Palms area into its municipal service area (see Map I-1 enclosed). Based on this agreement and upon Hillsborough County's approval of same, it is Deltona's position that the Deltona Service Area should be redesignated as a portion of the TSA rather than the CSA. Such redesignation would be more consistent with the city's present service plan.

5. Studies performed by local, regional, state and federal agencies in receiving waters (Hillsborough River and Cypress Creek) abutting Tampa Palms have shown that said waters do not meet standards for their established classifications.

In summary, The Deltona Corporation requests that the EPA modify its recommendation of "no action" with respect to the expansion of the City of Tampa's wastewater treatment plant. Since we support your conclusion that on-site or wetland disposal of treated effluent upstream of the Hillsborough River Reservoir could result in severe impacts, it is Deltona's position that the most feasible alternative and the alternative which will best serve the population of Hillsborough County is Alternative DE, the construction of a pump station and force main to convey the wastewater generated by the Tampa Palms area to the Hooker Point treatment facility. As indicated in the EIS, this alternative is both more cost effective and most environmentally-sound when compared to the present perferred alternative. It is also significant to note, with regard to the use of federal funds, that Deltona has already entered into an agreement with Hillsborough County to both secure all necessary approvals and to design and construct a pump station and force main to connect the Tampa Palms project to the existing City sewer system entirely at Deltona's cost. Detailed engineering plans for these improvements have been pending City and County approvals for several months. Further, based on the information contained in this letter and such information as is available in the public records, it should be evident that the adverse aspects of this alternative, as stated in the EIS, should not be considered as reasonable concerns. W-15

Thank you for the opportunity to comment on these approvals. We look forward to continuing to work with all interested parties in assuring that the development of Tampa Palms remains consistent with the best interests of Hillsborough County. Should you wish to further discuss Deltona's comments, I and other employees of The Deltona Corporation are available at your convenience.

Very truly yours,

Robert James [illegible], P.E.
Department of Environmental Services

cc: G. [illegible] - HUD
J. W. Apthorp - Deltona
[illegible] - Deltona
R. E. [illegible] - Deltona

4-30

STATE OF FLORIDA
Office of the Governor
THE CAPITOL
TALLAHASSEE 32301

BOB GRAHAM
GOVERNOR

December 2, 1981

Mr. John E. Hagan III, P.E.
Chief EIS Branch
EPA, Region IV
345 Courtland Street, NE
Atlanta, Georgia 30365

Dear Mr. Hagan:

In reference to your Draft Environmental Impact Statement for Central Hillsborough County-Tampa, Florida Wastewater Facilities, please be advised that we have circulated these documents to the concerned state agencies for their review and comment. As of this date, none of our reviewing agencies have submitted any substantive comments.

If we receive any comments from any agencies regarding this document, we will advise you immediately.

Thank you very much.

Sincerely,
Walt O. K

Walter O. Kolb
Sr. Governmental Analyst

WOK/jkc

cc: Mr. John Outland
Mr. Art Wilde
Mr. Dwynal Pettengill
Mr. Leonard Elzie
Tampa Bay Regional Planning Council
SW Florida Water Mangement District, Mr. Donald R. Feaster

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4.2 RESPONSES TO COMMENTS

Response W-1

It is generally accepted that seagrass beds are important components of the estuarine ecosystem and exhibit varying degrees of sensitivity to environmental modification, such as lowered salinity regimes. The decline of seagrass acreage in Tampa Bay over the last 100 years is clearly illustrated in a recent study (Mangrove Systems, 1980). This report provides the most recent known seagrass distribution in the Tampa Bay area and indicates that there are no significant populations in the vicinity of the Hookers Point Plant. Therefore, the low salinity currents in the northern portion of Hillsborough Bay will not affect any seagrass populations.

Response W-2

Spray Irrigation sites will be subject to the rules and regulations of the Department of Environmental Regulation, Chapter 17-6 (.04 and .08), Florida Administrative Code (FAC). Also, the appropriate local regulatory agencies will be contacted at the appropriate time when more detailed plans have been drawn up and the funding granted.

Environmental Assessment of any tract used for spray irrigation will have to occur, in order that the proper measures are selected to both select and protect the appropriate native communities of flora and fauna.

Spray Irrigation in wetland areas during periods of high rainfall (I.E. high groundwater) could use selected cut off of spray irrigation or irrigation runoff ditches to assure the assimilating capacity of the wetlands is not exceeded.

These mechanisms, as well as, a closely controlled monitoring system designed to suit each particular area will guarantee safe operating capabilities for the facility as required by state and local regulatory agencies, mentioned previously.

Response W-3

See response W-2 addressing spray irrigation sites.

Industrial reuse sites, if they do potentially occur, will be subject to the rules and regulations of the Department of Environmental Regulation, Chapter 17-6, Part II, Florida Administrative Code (FAC). If and when industrial reuse does occur more detailed planning will occur at both the state and local level.

Response W-4

The planning associated with any impacts which will occur to the Hillsborough County transportation system, i.e. disturbance to existing roadbeds or disruption of traffic service will be subject to approval from local and state agencies. More detailed planning will occur in the future, after funding is granted, which will address these concerns.

Response W-5

Sludge disposal sites will be made to follow the rules and regulations of the Department of Environmental Regulation, Chapter 17-7, Part I,II,III, Florida Administrative Code (FAC). A Part III is presently being compiled to address the specific problems associated with sludge disposal and the appropriate monitoring programs. This part will be in effect in January of 1983.

The sites will be chosen subject to these rules and regulation in the future when more detailed plans have been assembled.

Response W-6

The City of Tampa and the Deltona Corporation have agreed to the provision of sanitary sewerage for the Deltona development. This agreement is consistent with the "No Action" alternative, in that Federal funds will not be utilized to encourage development in what is considered wetlands. Since no federal funds are involved with this alternative, the Deltona Corporation can implement any environmentally suitable means of wastewater treatment and disposal which they deem appropriate.

Response W-7

Uses of reclaimed phosphate land projected by phosphate companies in their development of Regional Impact (DRI) studies are varied and include residential, recreational, agricultural, and wetlands. For example, reclaimed phosphate lands in Polk County adjacent to urban areas has been utilized for residential and commercial development, while reclaimed lands further removed from cities have been utilized primarily for recreation and agriculture. A similar pattern is projected for the southeastern portion of the county where major phosphate deposits are found. Therefore, there will be no effect upon the in-the-ground phosphate resources due to the existing trend of development centered around urban areas and major interstate transportation corridors which are removed from the southeastern portions of the county held by major phosphate mining companies.

Peat deposits are not going to be adversely affected by the alternatives selected because of the rarity of occurance and their proximity to urban areas and major interstate transportation routes.

Response W-8

Expansion of the detailed losses by species and area were included in the original drafts submitted. The loss of important species utilizing wetlands and Sand Pine - Oak habitat are inferred at several phases in the document - (e.g. p. II - 120 in Vol II). The site specific spray irrigation studies will deal with this issue in more detail

Response W-9

The premise used in evaluating impacts to threatened or endangered species in the 201 study area was that development would occur (with associated losses of protected species) with or without approval of a waste treatment plan. The two sections on pages IV-73 (Surface Ecosystem) and IV-74 (Rare and Endangered Species) both state that urbanization will occur with or without wastewater treatment improvements. The details on p. IV-73 depict losses to the ecosystem as a result of this development; thus a "with" and "without" project assignment is irrelevant. The recommended alternative selected by EPA was not to fund facilities improvement in the Deltona Region.

Response W-10

See response W-2 for discussion on spray irrigation of effluent.

Response W-11

See response W-2 for discussion on spray irrigation of effluent.

Response W-12

See response W-5 for discussions on sludge treatment and disposal. Also, see Chapter 2, Changes to the Draft.

Response W-13

At present the Department of Environmental Regulation (DER) is trying to obtain funds for a wasteload allocation study either through the EPA or other legislative channels. At present, no study is taking place, but DER is hopeful that the funding will become available in the near future, so that, a wasteload allocation study can get underway.

Respones W-14

Present conditions in Hillsborough Bay possibly represent a stabilization of eutrophication rates. Without the AWT plant at Hooker's Point, these eutrophication rates could be much worse. More detailed information generated in the future will hopefully provide a more detailed response to Mr. Lewis' questions.

Response W-15

The Environmental Protection Agency has not singled out the Deltona Corporation in its assessment of the Deltona Study area, but made its final decision based on the Deltona study area as a whole and the future impacts associated with the entire study area.

3.3 HEARING TRANSCRIPT

CENTRAL HILLSBOROUGH COUNTY TAMPA WASTEWATER MANAGEMENT
ENVIRONMENTAL IMPACT STATEMENT

DRAFT EIS PUBLIC HEARING
November 18, 1981
City Council Chambers
Tampa City Hall
7:30 - 8:10

PRESENT:

Bob Cooper, EPA
Paul Traina, EPA
Gene Sullivan, EPA
Ron Bizzarri, Greeley & Hansen
Harold Bridges, Smith & Gillespie

REPORTED BY:

Robert D. Cooper, CP, RPR
Notary Public

COPY

Pages 1 - 21

PROCEEDINGS

MR. TRAINA: Hearing will come to order.

I welcome you all to the public hearing on the Draft Environmental Impact Statement on proposed wastewater facilities for the City of Tampa and surrounding areas of Hillsborough County, Florida.

First let me begin by introducing the panel.

On my right is Mr. Gene Sullivan, the Florida Department of Environmental Regulation.

On my left is Mr. Robert Cooper, who is the EPA Project Officer on this project.

The purpose of this evening's hearing is to receive public and other agencies' comments on the wastewater management proposal contained in the draft Environmental Impact Statement for Tampa and central Hillsborough County, Florida.

This EIS is being prepared on wastewater facilities proposed in the 201 Facilities' Plan prepared for the City of Tampa and Hillsborough County, Florida, by Greeley and Hansen Engineers, Inc., Tampa, and Smith and Gillespie Engineers, Inc., Jacksonville.

The preparation of this EIS is authorized by the Clean Water Act and the National Environmental Policy Act. The Clean Water Act enables EPA to fund up to 75 percent of the eligible costs for the planning, design and construction of wastewater facilities.

separated into the Tampa and the county service area. This shows the county service area, which was further subdivided into six study areas, consisting of the Deltona, Northeast, Thonotosassa, Brandon, Riverview, Gibsonton and Southeast study areas.

The overlay on this figure here is the projected land use plans for the year 2000, showing the industrial, urban, urban transition, suburban and open rural areas.

Based on the projected land use plan, we concluded that within the 20-year planning period, up through the year 2000, that some form of sewage service would be required for the Deltona area, if the Deltona development occurs, or the Thonotosassa area, due to the projected development of urban and suburban, for the Brandon area and for this portion of the Riverview/Gibsonton area.

In each of these areas, alternatives that were considered included either pumping the wastewater, or a portion of the areas' wastewater to the City of Tampa for treatment, or building treatment facilities and disposal facilities within the study areas.

In each of the study areas, for those alternatives where they would build a treatment plant and dispose within the study area, we considered disposal to surface waters, land application of various types, and deep well injection.

For the Deltona study area, we concluded through

The planning phase of this process results in the preparation of facilities plan. In this instance, the City of Tampa and Hillsborough County have been designated as the local agencies responsible for facilities planning in the area.

The National Environmental Policy Act requires federal agencies to prepare an environmental impact statement on major federal actions significantly affecting the quality of the human environment.

Because of the environmental complexities and water quality issues involved in this project, EPA made the decision to prepare an impact statement on the 201 Facilities Plan.

Accordingly, in December of 1978 the notice of intent to prepare an EIS was issued. Pursuant to the guidelines of the President's Council on Environmental Quality and the rules and regulations of EPA with regard to the preparation of EIS, this public hearing is being held to receive comments on the draft EIS.

The draft EIS and facilities plan are being discussed in a public forum to encourage public participation in the federal decision-making process, and to develop improved public understanding of federally funded projects.

In this regard, the draft EIS was made available to the public and the EPA's office of Federal Activities in

Washington on September 17th, 1981, and was listed in the Federal Register on September 25th, 1981.

We'll keep the EIS comment period open until November 30th, 1981. Comments received during this evening, and during the comment period will become part of the record.

Let me ask you if you're here this evening, those of you here, if you haven't filled out a card, we ask you to do that, and we have a copy of the Impact Statement, which is the blue document, and in fact also out there is an executive summary section of that statement.

At this point I would like to call on Mr. Robert Cooper, who will provide us with a brief summary of this project.

Mr. Cooper.

MR. COOPER: The purpose of the EIS is to select the wastewater treatment and disposal system which is the most cost effective and environmentally sound system for the 201 Planning Area.

To meet this requirement, alternative systems were developed and evaluated. And to help briefly describe the systems that were developed, I would like to call on Ron Bizzarri of Greeley and Hansen and Harold Bridges of Smith and Gillespie to briefly describe their various areas of authority.

MR. BIZZARRI: The wastewater plan for the City of

Tampa comprises two principal parts. One part is related to the collection system, and the facilities include works to accommodate the estimated future wastewater quantities, to provide relief facilities where capacity limitations have been identified in the existing system, and to correct structural deficiencies with old existing systems.

The second part of the Tampa wastewater plan includes expansion of the wastewater treatment plant on Hookers Point to accommodate the estimated future wastewater quantities, and the expanded plant development was arrived at after the evaluation of some 35 alternatives.

The new facilities include treatment with a two-stage biological treatment process, followed by deep bed filtration for nitrogen removal,anaerobic digestion of the waste sludges.

A principal feature of the new plant expansion includes energy recovery facilities, which comprise on-site generation of electrical power using methane gas received from the anaerobic digestion process.

The digested stabilized sludge will be dewatered on open drying beds, and belt filters, and the dewatered sludge is disposed of off-site.

And that about is the summary of the projects and the plan for the Tampa service area.

MR. BRIDGES: The total planning area was separated into the Tampa and the county service area. This shows the county service area, which was further subdivided into six study areas, consisting of the Deltona, Northeast, Thonotosassa, Brandon, Riverview, Gibsonton and Southeast study areas.

The overlay on this figure here is the projected land use plans for the year 2000, showing the industrial, urban, urban transition, suburban and open rural areas.

Based on the projected land use plan, we concluded that within the 20-year planning period, up through the year 2000, that some form of sewage service would be required for the Deltona area, if the Deltona development occurs, or the Thonotosassa area, due to the projected development of urban and suburban, for the Brandon area and for this portion of the Riverview/Gibsonton area.

In each of these areas, alternatives that were considered included either pumping the wastewater, or a portion of the areas' wastewater to the City of Tampa for treatment, or building treatment facilities and disposal facilities within the study areas.

In each of the study areas, for those alternatives where they would build a treatment plant and dispose within the study area, we considered disposal to surface waters, land application of various types, and deep well injection.

For the Deltona study area, we concluded through our cost effective analysis that the only alternatives considered to be cost effective would be to either pump it to Tampa or to treat it within service areas, and dispose of it by a somewhat new method called wetlands disposal.

For the Thonotosassa area, the cost effective alternatives are determined to be either pumping it to the City of Tampa or treating it within the study area and disposing of it through spray irrigation.

For the Brandon study area, it was determined that cost effective alternatives would be to build a treatment plant within the study area to treat all of the wastewater within the study area, and dispose of it through spray irrigation, or, if feasible, to treat it to secondary treatment, plus nitrification degree of treatment and dispose of it into the Alafia River.

For the Riverview/Gibsonton study area, in addition to the alternatives mentioned of pumping to Tampa or treating within the study area, we looked at another alternative of transporting the wastewater down to the south county area for treatment and disposal at the new proposed south county treatment plant.

The cost effective alternatives for Riverview/Gibsonton were determined to be treatment within the study area, and disposal by spray irrigation, treatment within the study area, and disposal by discharge to the Alafia River, and just pumping it to the south county for treatment disposal there.

MR. COOPER: After the careful evaluation of these alternatives, the preferred alternative for the Tampa service area and the county service area were selected by EPA, and published in the Draft EIS for the city, the preferred alternative is discharge of treated wastewater into Hillsborough Bay.

The exact level of treatment will be based upon the results of the waste load allocation study that has yet to be completed.

While this alternative does continue the previously established pattern of discharge to Hillsborough Bay, it recognizes substantial improvements in water quality as a result of the operation of the Hookers Point Plant.

Also, further recycling and reuse options are also under additional evaluation. The preferred alternative for wastewater collection and transmission in the Tampa service area is the provision of service to all areas as shown in Figure 1 of your hand-out, excluding the second phase of the northeast intersection.

This option provides a cost effective and environmentally sound system without encouraging the development of the Hillsborough River flood plain and above the city's water supply intake.

For the four counties service areas, first for Deltona, the preferred alternative is the No-Fed Action alternative. This precludes the use of federal funds to encourage development in the wetlands environment.

This alternative is also consistent with the expanding grant funds to clean up existing water quality problems, rather than promoting development, since no water quality problems have been demonstrated to exist in this area.

For Thonotosassa, the preferred alternative again is No-Fed Action. This alternative includes the use of federal funds to encourage development, where again, no need has been demonstrated to currently exist.

The need for provision of service will be re-evaluated again in this area following the 1990 census. In Brandon the preferred alternative exists of construction of a treatment plant for secondary treatment, and disposal of effluent by spray irrigation.

Site specific studies will be needed to verify the environmental suitability of each proposed spray irrigation site.

Site specific studies will also be needed in the Brandon area to determine specific areas which are suitable for septic tanks which need to be put on the regional system.

For Riverview/Gibsonton, the preferred alternative consists of pumping the wastewater to the proposed south county facility for treatment and disposal there by spray irrigation.

In both the case of Brandon and Riverview/ Gibsonton, the preferred alternative for collection and transmission of wastewater, cost approval now for those phases is scheduled for construction by 1990.

Planning approval of additional phases will be delayed until after the results of the 1990 census are available, and the need can be further justified.

MR. TRAINA: Thank you, Mr. Cooper. Okay.

At this point the hearing is yours. You've heard the presentation of what the tentative decision of EPA is, and the idea of the hearing this evening is to hear from the public.

As I've indicated earlier, we've asked you to fill out the cards, and we have one individual, I see only one at this point that would like to make a statement.

So I would like to call on Mr. Robin Lewis.

MR. LEWIS: I would like to say that I'm speaking as a representative of the Hillsborough Environmental Coalition, which have been participating in the assistance advisory committee on this project since June of 1979, so we've been following it fairly carefully, and I've been submitting comments continuously throughout the project.

We have some letters with us tonight which were submitted as early as September of 1979, and as this project has been going on.

My personal experience is as a marine biologist, and I have worked in Tampa Bay since 1966, so about 15 years, and I was involved initially with sewage treatment problems in Tampa Bay before there was an AWT plant at Hookers Point, and, in fact, was part of the group of people who encouraged an AWT plant to be installed here.

And one of the reasons that, of course, the AWT plant was put into operation in the first place was because of existing sewage treatment plant problems and bay problems.

And most everybody should be aware of this document. John Hagan participated, and I know that his name is on the front of this.

One of the things that the coalition is concerned about in the Draft EIS is, first of all, that there's very little consideration given to the past historical problems in Tampa Bay.

I know there was a statement made, Mr. Cooper just made it, I guess, about substantial improvements in water quality. I think we have to ask ourselves the question, why do we treat sewage?

We don't treat sewage really just for water quality improvements. What we really treat sewage for is for human health problems and for biological improvement. That's what we're really after.

The fish, the birds, not too much bacteria in the water and so forth. And those are the kind of things that if we're going to spend all this money for sewage treatment, that I think should be addressed in the Draft EIS. I don't think they are.

In fact, the Hagan Report is passed over in a very cursory fashion. Now, as I've said, I've been involved with this for quite a longer period of time, and we had problems with algae in Tampa Bay, and as a marine biologist, I've been aware of these problems.

We had problems with algae. It's documented well in the Hagan Report.

The south treatment plant was improved in hopes of improving some of those problems, and initially, all of us who worked in the bay thought that there were some indications of improvement.

The classic odor problems along Bayshore Boulevard, for example. Within the last year or two, we've seen a reoccurrence of the same algae problem.

I personally have been out on the bay and documented and reported to the city values as high as 16,000 pounds per acre, dry weight of marine algae, of the same species that were reported in the Hagan Report, occurring within the last year in Tampa Bay, in Hillsborough Bay.

Now, I'm not trying to say that I know what's going on in Hillsborough Bay. I'm trying to say that I, along with I think a lot of other people, don't know what's going on in Hillsborough Bay, and it bothers me that we proceed with planning for sewage treatment facilities without truly understand what is going on.

I'm not arguing that we shouldn't do it, so don't anybody take me wrong on that point. The coalition supports 100 percent needed improvements in the sewage treatment system, particularly things like the overflows into Hillsborough River.

I mean, that is a critical, urgent problem that needs as fast as possible more work done on it. I haven't been involved in all the planning on it, but I do know that there are reoccurring overflows even as late as last summer into the Hillsborough River, and that needs to be, whatever engineering is necessary to improve that obviously needs to be done.

But we're talking about expanding the sewage treatment plant. We're talking about more people in Tampa and the sewage going down here and more inputs into the bay, in spite of the fact that AWT effluent when you go from one amount of effluent and double it you're going to have increased flows of nutrients and other materials into Tampa

Bay, particularly Hillsborough Bay.

I don't think we understand enough about what's going on out there, and I don't think the Draft EIS really addresses some of these problems.

And we have tried, the coalition, has submitted letters and tried to suggest certain improvements in it, and there have been improvements, and to dip right into these things is very difficult; I know that.

But we think there are still some points that need to be addressed here, particularly related to what's going on in the bay itself, because when you think about it, that's what all this money and all this concern is about.

The river too, to be sure. But ultimately the big concern has been for many, many, many years about what's going on in Hillsborough Bay, in Tampa Bay, and we just seem to be glossing over that.

Now, the city has invested some substantial amounts of money in primary productivity study. It's ongoing now. It's a very excellent study that has some preliminary indications, but I don't think that's enough.

I really think we need to take a -- and I would encourage EPA to consider the fact that it's the bay that's receiving the ultimate effluent in most cases, and we are concerned about that.

Well, as I said, we have submitted some letters on this, and I notice that in the document there has been a lot of communications by letter concerning this project. And none of that's reflected in the EIS.

I know it's not routine to put some of these in there, but in addition to the comments that are submitted directly in response to the Draft EIS, I would encourage EPA to look at some of the communications that have been going on for over 24 months, letters that have been submitted, suggestions and so forth.

I think to be fair too, atleast some of these letters should be included in the EIS, because people have been commenting all along, and I think you could ask any of the consultants that have worked on this project. We have tried to be helpful.

They come to our offices and we try to supply them the information.

MR. TRAINA: Mr. Lewis, I appreciate your coming and making those comments. We are not unaware of the concerns with regard to the water quality in the Hillsborough Bay, and the impact statement does make reference, and the statement does make reference to the fact that there needs to be and will be done a waste allocation study.

The immediate concerns, as you've pointed out, that this EIS addresses, is the service area question, not only for the city but county.

When you get into these things and it gets to the point that you start broadening them and broadening them, and one thing -- as a fellow beaureaucrat I can tell you that I find intolerable is delay in federal decisions, so we made a conscious decision to move ahead, looking at the, albeit, a more narrow question, but an important question as to what the service area is.

That is the subject of the EIS. This does not mean to preclude the need and the conduct of a water quality study in the bay, which will determine ultimately the degree of treatment that's going to be received by the bay waters.

MR. LEWIS: But I would caution you and anybody who looks at waste allocation studies -- and I've had some experience with these, with at least reading them -- and again, you get back to waste allocation studies, what waste allocation study can you point to me, if you think about it in your own mind, that truly addresses again the biology that's going on.

These waste allocation studies and the one that's going on for Hillsborough Bay is going to do the same thing when it comes out and I'm going to growl about it when it comes out the same way.

The bay has a biological system, an ecological system, and the whole concern and the whole concern for years has been the biology of the bay. What waste allocation study looks at the biology? They generally look at it with a computer model, some manipulations of DO's, which are not zoned. They're strata. They're all mixed in the water and these things.

And it really has no biological value at all. So, when you get to that point, six months from now, a year, two years, I'll be gack here, and I'll tell you what I think of your waste allocation study.

And I hope it's better than I think it's going to be.

MR. TRAINA: What we should do is put you on a committee. I'm sure there will be a committee here. What we need is to get you involved in this.

MR. LEWIS: I've been on a lot of committees and I'll be happy to participate on some more committees, but there's almost a mechanical way of plodding along on these things that tends to ignore the realities of life, and it bothers me a lot.

So, I just wanted to say that.

MR. TRAINA: Well, again, I appreciate your taking the time to do that. I want to assure you and others that this EIS does not preclude, as a matter of fact, it addresses the question of water quality studies in the bay.

We realize that those have to be done, and we have proceeded to those. Let me ask you with regards to the comments about the letters and so on, that if you have a few of those that you feel are particularly germaine here, I'm sure they all are, if you'll leave those, we'll assure you that they'll be a part of the final EIS when it's published.

MR. LEWIS: Thank you.

MR. TRAINA: I have no indications of anyone else liking to make a statement here, but at this point I would like to throw it open to anyone who would like to comment, ask a question.

This is your hearing, your meeting. I don't know if I'm encouraged or not by that. Okay.

Hearing no other comments, let me just conclude by saying that the hearing, as I've indicated earlier, will be open until the 30th of November, and anyone who maybe has some second thoughts or would like to send us some comments, written comments, we'll be more than happy to receive those.

They should be addressed to, guess who, John E. Hagan, of the Hagan Report. Same individual. I have to tell you all that there's a bit of pride here that I was explaining to John Hagan's supervisor when he made the report and the only mistake I made is I didn't put my name on it.

I thought at the time that the report was out that it would be such a bomb that I would like Hagan to take all the problems with it. But Mr. Hagan is now the acting chief, and everybody in EPA is acting these days.

But the Environmental Assessment Branch for EPA is at 345 Courtland Street. That address is on part of the document here, so you can send any comments you want to Mr. Hagan and I'm sure he'll be glad to hear from you.

I want to thank you all for coming this evening. Mr. Lewis, especially you for participating with us.

As I say, the comments received this evening and during the comment period will be reviewed, and we'll respond to them in the final EIS.

And I want to make that point, that your letters, we'll put them in and put a response in and we'll address the problem of the waste allocation study more specifically.

The final EIS will be consisting of the agency's final decision, a summary of the Draft EIS and pertinent similar add-in will be a, revisions, comments, received and EPA's responses to those comments.

And also, I was going to say a transcript of this hearing, because of budgetory problems we can't afford a court reporter any more, so we don't do transcripts.

Those of you who have comments in it, or are submitting comments, and if you filled out this little card, you'll receive a copy of the final EIS, and if you haven't filled out the cards you're not going to get a copy of the final EIS.

consists of pumping the wastewater to the proposed south county facility for treatment and disposal there by spray irrigation.

In both the case of Brandon and Riverview/ Gibsonton, the preferred alternative for collection and transmission of wastewater, cost approval now for those phases is scheduled for construction by 1990.

Planning approval of additional phases will be delayed until after the results of the 1990 census are available, and the need can be further justified.

MR. TRAINA: Thank you, Mr. Cooper. Okay.

At this point the hearing is yours. You've heard the presentation of what the tentative decision of EPA is, and the idea of the hearing this evening is to hear from the public.

As I've indicated earlier, we've asked you to fill out the cards, and we have one individual, I see only one at this point that would like to make a statement.

So I would like to call on Mr. Robin Lewis.

MR. LEWIS: I would like to say that I'm speaking as a representative of the Hillsborough Environmental Coalition, which have been participating in the assistance advisory committee on this project since June of 1979, so we've been following it fairly carefully, and I've been submitting comments continuously throughout the project.

Again, I want to thank you all for coming. I always enjoy coming to Tampa. It's a pleasure.

Let me just say, this is off the record really, but I had the good fortune and pleasure this afternoon of visiting the Hookers Point Plant, and I've been involved in this business in this area of the country for about 20 years now, and there's no finer plant that I've seen, and run by no finer group of professional people that I've seen than the Hookers Point Plant of the City of Tampa.

All of you who are from this area, you have my envy, if you will, in that you are served by excellent public officials who do just a terrific job with the wastewater treatment and collection.

So with that, I adjourn the hearing.

(Proceedings concluded at 8:10 p.m.)

CERTIFICATE OF REPORTER

STATE OF FLORIDA :

COUNTY OF HILLSBOROUGH :

I, Robert D. Cooper, Notary Public in and for the State of Florida at Large,

DO HEREBY CERTIFY that the foregoing deposition was taken before me at the time and place therein designated; that before testimony was taken, the deponent was by me duly sworn; that my shorthand notes were thereafter reduced to typewriting under my supervision; and that the transcript, numbered pages 1 through 21, inclusive, is a true record of the testimony given by the witness.

I FURTHER CERTIFY that I am not a relative, employee, attorney or counsel of any of the parties, nor relative or employee of such attorney or counsel, nor am I financially interested in the outcome of the foregoing action.

WITNESS MY HAND AND SEAL THIS, the 10th day of December, 1981, IN THE CITY OF TAMPA, COUNTY OF HILLSBOROUGH, STATE OF FLORIDA.

Robert D. Cooper

NOTARY PUBLIC, State of Florida
My Commission expires: 4/14/84

Transcribed by: Lora Ruddick

4.4 RESPONSES TO TRANSCRIPT COMMENTS

No questions at the public hearing with the exception of Mr. R. Lewis. Mr. Lewis' questions were addressed in response to his letter in responenses to written comments W-14.

5.0
COORDINATION

5.1 FINAL ENVIRONMENTAL IMPACT STATEMENT COORDINATION LIST

The following, state and local agencies, public officials, organizations, and interest groups have been requested to comment on this impact statement.

Federal Agencies

U.S. EPA, Region IV
U.S. Geological Survey
U.S. Army Corps of Engineers, Jacksonville District
U.S. Department of Agriculture, Soil Conservation Service
U.S. Department of Commerce
U.S. Department of Housing and Urban Development
U.S. Fish and Wildlife Service
U.S. Department of the Air Force
U.S. Department of the Interior
U.S. Department of Health and Human Services

Members of Congress

State Contacts

Florida Department of Environmental Regulation
Florida Bureau of Geology
Florida Department of Transportation
Florida Bureau of Census
Florida Department of State, Divison of Archives
Florida Department of Education
Florida Department of Natural Resources
Florida Game & Freshwater Fish Commission
Florida Office of the Governor

Local and Regional

Southwest Florida Water Management District
Tampa Bay Regional Planning Council
West Coast Regional Water Supply Authority
Hillsborough County Environmental Protection Commission
Hillsborough County Planning Commission
City of Tampa
Hillsborough County

Interest Groups

Tampa Bay Area Scientific Information Society
The Deltona Corporation

6.0
LIST OF PREPARERS

The Draft EIS for the proposed wastewater facilities for the City of Tampa, the City of Temple Terrace and portions of adjacent unincorporated Hillsborough County was prepared for the EPA by Dames & Moore (D&M) of Lakeland, Florida using the third party EIS preparation method. The names and qualifications of the D&M staff responsible for the preparation of this EIS are presented in Table 6-1. An independent evaluation of all information presented in the EIS was also performed by the following EPA officials, City of Tampa officials, and Hillsborough County officials.

TABLE 6-1 PROJECT PERSONNEL

U.S. Environmental Protection Agency

Robert B. Howard	Chief, NEPA Compliance Section
Robert C. Cooper	EIS Project Officer
David Peacock	Chief, Florida/Mississippi Facilities Planning Section
Fritz Wagner	201 Project Engineer
Bill Kruczynski	Ecological Review Branch

City of Tampa

Howard Curren	Project Manager

Hillsborough County

Warren Smith	Project Manager
Victor Formby	Project Manager

201 Facilities Plan Engineers

Smith & Gillespie Engineers - Jacksonville, Florida
    Harold Bridges - Project Manager
Greeley & Hansen - Tampa, Florida
    Ronald Bizzarri - Project Manager

TABLE 6-1 PROJECT PERSONNEL (Cont'd)

Dames & Moore	
T.M. Gurr	Project Director
Lawrence J. Maron	Principal Investigator-Surface Water Editor - DEIS
Michael A. Luckett	Principal Investigator - Geology
Mark R. Stephens	Principal Investigator - Ground Water
Thomas Simpson	Principal Investigator - Biology
W. Terry White	Principal Investigator - Socioeconomics
Marvin Smith	Principal Investigator - Land Use
James Little	Principal Investigator - Air Quality
Robert Glassen	Associate Project Manager Editor - Technical Resource Documents, Volumes I and II

TABLE 6-2 QUALIFICATIONS OF DAMES & MOORE

NAME	QUALIFICATIONS	RESPONSIBILITY
T. M. Gurr	M.A., Geology; Associate, Dames & Moore Consultants, 13 years experience with multidisciplinary studies dealing with environmental permitting and geotechnical assessments for industry and government.	Project Director
Robert C. Glassen	Ph.D (pending completion of dissertation) geology; Senior Geologist, Dames & Moore Consultants, 11 years experience including technical coordination of environmental impact statements and multidisiplinary studies for industry and government.	Associate Project Manager Editor - Technical Resource Documents, Volume I and II.
James Little	M.S.P.H., Air and Industrial Hygiene, Dames & Moore Consultants, 9 years experience with direction of air quality evaluations for industry and government.	Principal Investigator - Air Quality
Michael A. Luckett	M.S., Geology; Senior Geologist, Dames & Moore Consultants, 11 years of experience with environmental, hydrologic, and geotechnical studies for industry and government.	Principal Investigator - Geology
Lawrence J. Maron	M.S., Water Resources; Senior Engineer, Dames & Moore Consultants, 8 years of experience with direction of geotechni- and environmental studies for industry and government.	Principal Investigator - Surface Water Editor - DEIS
Thomas E. Simpson	Ph.D., Biology; Senior Biologist, Dames & Moore Consultants, 14 years of experience with biological studies for environmental impact statements, Nuclear power plant sitings and other multidisciplinary studies for industry and government.	Principal Investigator - Biology

TABLE 6 -2 QUALIFICATIONS OF DAMES & MOORE(Cont'd)

NAME	QUALIFICATIONS	RESPONSIBILITY
Marvin Smith	B.A., Business Administration and Industrial Geography,Project Geographer, Dames & Moore Consultants, 9 years of experience with environmental analysis of land use population, transportation, and historical and archaeological surveys for industry and government.	Principal Investigator - Land Use
Mark R. Stephens	M.S., Geology and Water Resources, Senior Hydrogeologist, Dames & Moore Consultants 7 years of experience with groundwater investigations involving chemical waste disposal, industrial process water impoundments, and subsurface hydrocarbon contamination for industry and government.	Principal Investigator - Ground Water
William T. White	Ph.D., Sociology, Senior Sociologist, Dames & Moore Consultants 11 years of experience with socioeconomic impact analysis for communities, power plant projects, Alaskan Gas Pipeline and port development for industry and government.	Principal Investigator - Socioeconomics

7.0

APPENDIX

3-21

Client

Description [illegible]

Project No.

HOOKERS POINT AWT PLANT
BASES FOR ALTERNATE SLUDGE FACILITIES
EXISTING PLANT-60MGD

ITEM	DESCRIPTION	SHEET NO.
1	ALTERNATE DIGESTION/DEWATERING FACILITIES	FIG. 1
2	EAC COMPARISON	1
3	CAPITAL COST COMPARISON	2
4	BIO-STEP /PRIMARY SLUDGE	3
5	ANAEROBIC DIGESTION PROCESS	4
6	DIGESTED SLUDGE	5
7	GAS PRODUCTION	6
8	ENERGY PRODUCTION AND SAVINGS	7
9	EPA PROPOSAL - EAC COST	8
10	EPA PROPOSAL - CAPITAL COST	9
11	MODIFIED EPA PROPOSAL - EAC COST	10,11
12	MODIFIED EPA PROPOSAL - CAPITAL COST	12,13

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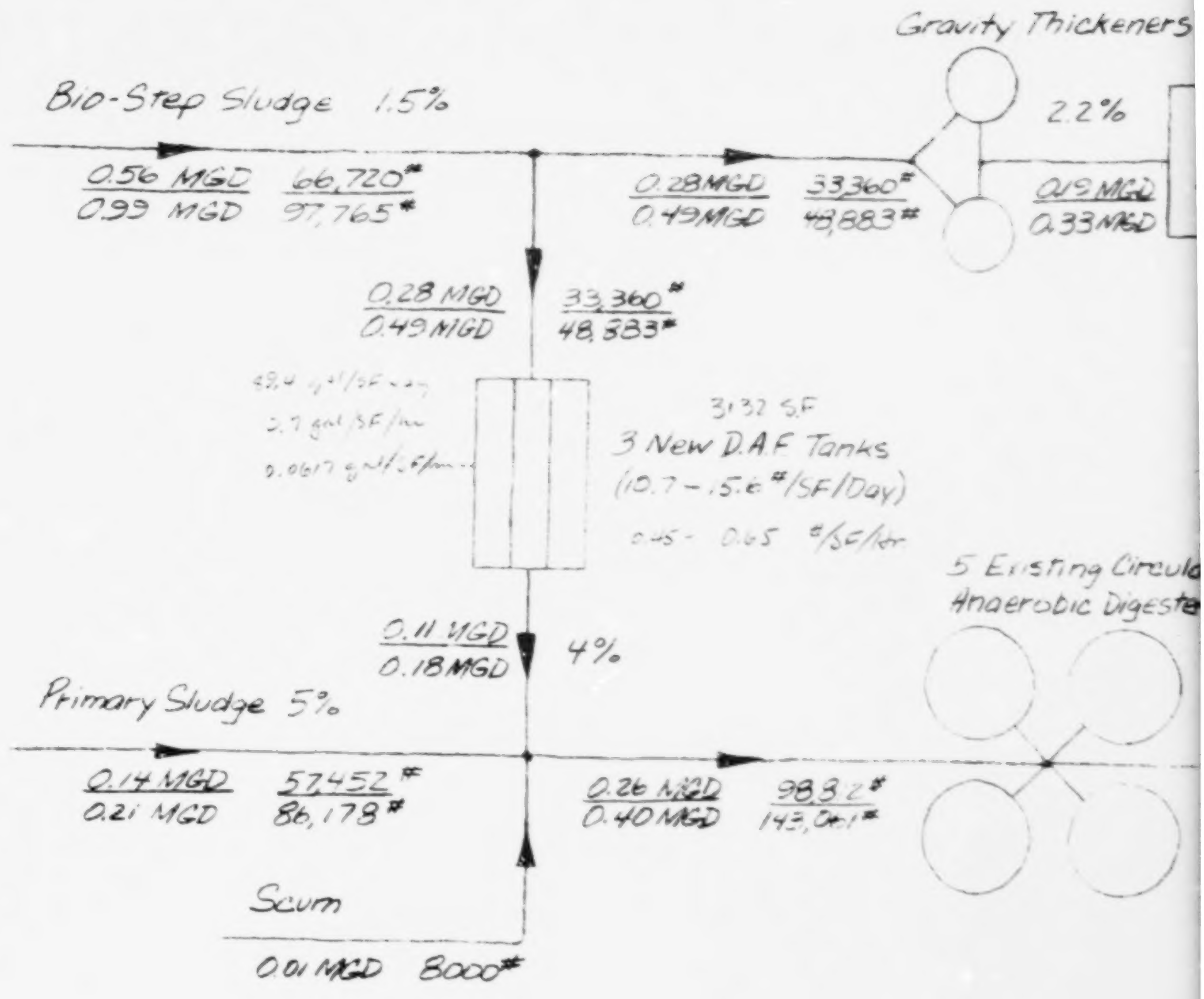
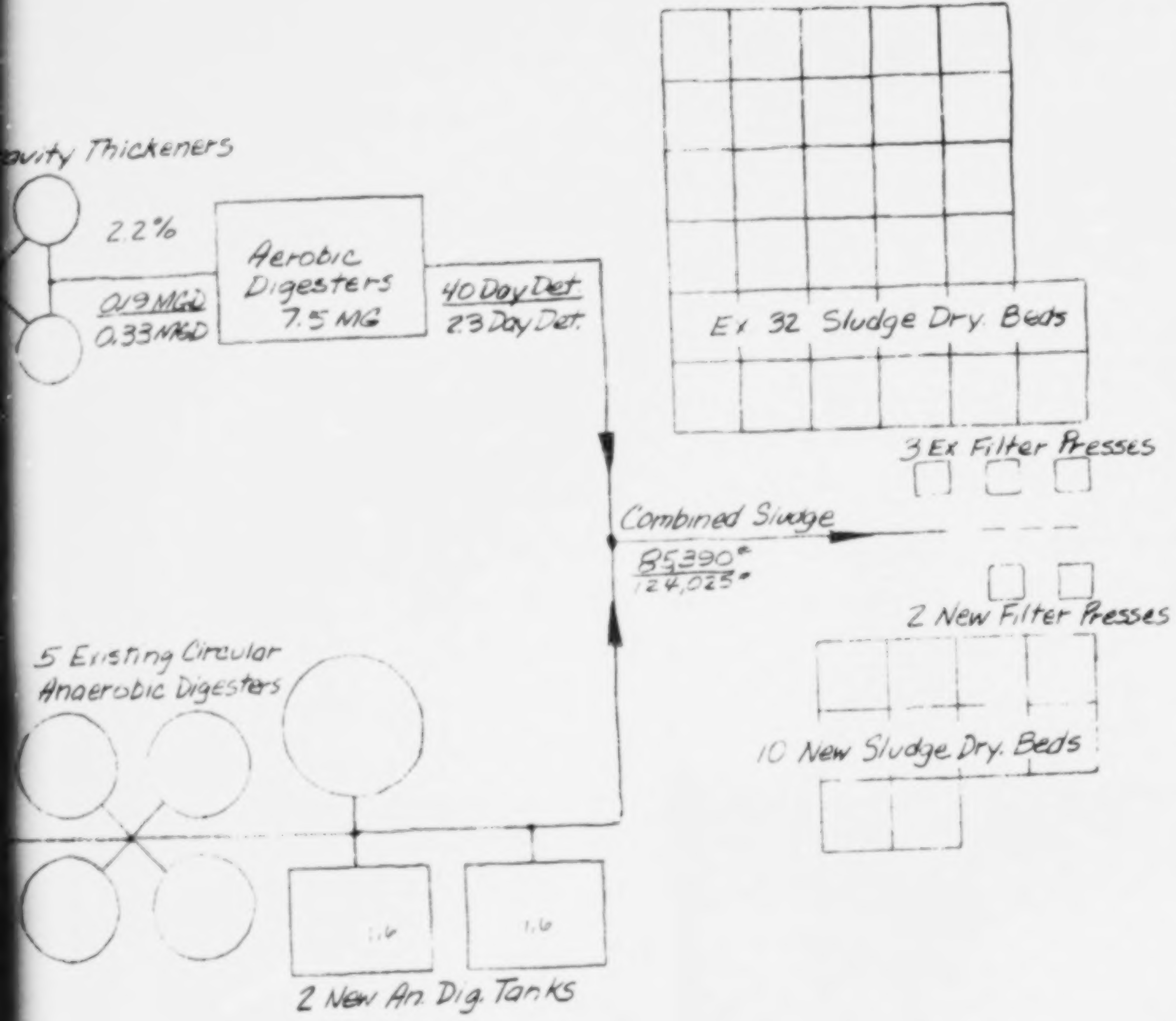

Gravity Thickeners
Bio-Step Sludge 1.5%
0.56 MGD
0.99 MGD
66,720#
97,765#
0.28 MGD
0.49 MGD
33,360#
48,883#
2.2%
0.19 MGD
0.33 MGD
0.28 MGD
0.49 MGD
33,360#
48,883#
49.4 gal/SF-day
2.7 gal/SF/hr
0.0617 gal/SF/min
3132 SF
3 New D.A.F Tanks
(10.7 - 15.6#/SF/Day)
0.45 - 0.65 #/SF/hr
5 Existing Circula
Anaerobic Digeste
0.11 MGD
0.18 MGD
4%
Primary Sludge 5%
0.14 MGD
0.21 MGD
57,452#
86,178#
0.26 MGD
0.40 MGD
98,3 2#
143,061#
Scum
0.01 MGD 8000#

Alternative Sludge Digestion/


avity Thickeners
2.2%
0.19 MGD
0.33 MGD
Aerobic Digesters 7.5 MG
40 Day Det
23 Day Det.
Ex 32 Sludge Dry. Beds
3 Ex Filter Presses
Combined Sludge
85390#
124,025#
2 New Filter Presses
10 New Sludge Dry. Beds
5 Existing Circular Anaerobic Digesters
1.6
1.6
2 New An. Dig. Tanks

udge Digestion/Dewatering Facilities

HOOKERS POINT AWT PLANT
BASES FOR ALTERNATIVE SLUDGE FACILITIES
EXISTING PLANT - 60 MGD FLOW
DEC 18, 1981

7-4 [illegible]

Sheet 1 of 2

EAC COMPARISON

ITEM	DESCRIPTION	EPA PROPOSAL COST	MODIFIED EPA PROPOSAL COST
1.	NEW PRIMARY TANKS	109,900	109,900
2.	REHAB 5 EXISTING ANAEROBIC DIGESTORS	74,300	74,300
3.	REPLACEMENT ENG-GEN 2 UNIT	45,600	45,600
4.	NEW DRYING BEDS 31 - EPA 10 - MOD. EPA	236,300	48,700
5.	NEW FILTER PRESS FACILITY 4 - EPA 5 - MOD EPA	69,200	76,700 -
6.	NEW DAF THICKENERS	- 0 -	32,500
7.	NEW ANAEROBIC DIGESTORS	- 0 -	107,600
8.	NEW ENG-GEN SET	- 0 -	35,300
9.	POLYMER - DRYING BED	42,600	28,500
10.	POLYMER - FILTER PRESS	44,400	96,600
	SUBTOTAL ANNUAL O&M	622,300	655,700
11.	INCREMENTAL POWER PRODUCTION	- 0 -	(165,600)*
12.	OPTIMUM LOADING ON AEROBIC DIGESTORS	- 0 -	(87,600)* 325
	TOTAL ANNUAL O&M	622,300	402,500
	EAC	2,635,500	2,494,200 2,594,200

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CAPITAL COST COMPARISON

ITEM	DESCRIPTION	EPA PROPOSAL COST	MODIFIED EPA PROPOSAL COST
1.	NEW PRIMARY TANKS	$4,718,000	$4,718,000
2.	REHAB 5 EXISTING ANAEROBIC DIGESTORS	2,477,000	2,477,000
3.	REPLACEMENT ENG-GEN 2 UNITS	1,464,000	1,464,000
4	NEW DRYING BEDS 21 - EPA PROPOSAL 10 - MOD. EPA PROPOSAL	7,877,000	1,634,000
5.	NEW FILTER PRESS FACILITY 4 - EPA PROPOSAL 5 - MOD. EPA PROPOSAL	1,716,000	172,000 1,888,000
6.	NEW DAF THICKENERS	-0-	1,368,000
7.	NEW ANAEROBIC DIGESTORS	-0-	4,427,000
8.	NEW ENG-GEN SET	-0-	987,000
	TOTAL EST. CONST. COST	18,252,000	18,963,000
	18% SERVICE & INTEREST	3,285,000	3,413,000
	TOTAL EST. PROJECT COST	21,537,000	22,376,000

$907,000
163,000
1070,000

23,446,000

Date	Design	Department	Sheet 2 Of 3
	Check	Job Description	Project No

BIO-STEP SLUDGE

	An. Avg.	Max. Month
Sludge Quantities	0.56 MGD	0.99 MGD
1.5% Solids		
lbs/Day	66,720	97,765

Split Bio-Step Sludge to Aerobic and Anaerobic Digestion Processes.

▲ Sludge Quantities to Aerobic Process	0.28 MGD	0.49 MGD
lbs/Day	33,360	48,883
Gravity Thickening 2.2% Solids	0.19 MGD	0.33 MGD
Aerobic Digester Volume	7.5 MG	7.5 MG
Detention Time	[redacted]	[redacted]

▲ Sludge Quantities to Anaerobic Process	0.28 MGD	0.49 MGD
lbs./Day	33,360	48,883
DAF. Thickening		
No. of Tanks	3	3
Area ea. Thickener - SF	1044	1044
Total Area - SF	3132	3132
Loading - lbs/SF/Day	10.7	15.6
Thicken to 4% Solids	0.11 MGD	0.18 MGD

PRIMARY SLUDGE w/ 4 New Tanks

Sludge Quantities 5% Solids	0.14 MGD	0.21 MGD
lbs./Day	57,452	86,178
SCUM - return Bio-Step Sludge	0.01 MGD	0.01 MGD
lbs./Day	8,000	8,000

	Date	Department	Sheet 3 Of 3
	Check	Job Description	Project No

ANAEROBIC DIGESTION PROCESS

	An. Avg.	Max. Month
Bio-Step Sludge (D.A.F. Thickened)	0.11 MGD	0.18 MGD
Primary Sludge	0.14 MGD	0.21 MGD
Scum	0.01 MGD	0.01 MGD
Total	0.26 MGD	0.40 MGD
Existing An. Dig. Volume	4.37 MG	4.37 MG
Ex. An. Dig. Volume w/ Largest Unit out of Service	3.12 MG	3.12 MG
Ex. Det. Time w/ Largest Unit out of Service	12 DAYS	8 DAYS
Capacity Req'd for 15 Day Det. Time	3.9 MG	6.0 MG
Additional Capacity Req'd for 15 Day Det. Time (Ex. 4.37MG) w/ All units in Service	-	1.63MG ← largest unit
Total Capacity Req'd for Operation w/ Largest Unit out of Service	5.15 MG	7.63 MG
Additional Capacity Req'd.	0.78 MG	3.26 MG

[redacted]

Allowable Loading - Detention Time/Solids
15 Day - 200 lbs/Day/1000 CF

	An. Avg.	Max. Month
Volume	3.9 MG	6.0 MG
1000 CF	521	802
Allowable Loading lbs./Day	104,200	160,400
Actual Loading lbs./Day	98,812	143,061

	By	Department	Sheet [illegible] Of [illegible]
	Check	Job Description	Project No.

DIGESTED SLUDGE

	An. Avg.	Max. Month
Anaerobic Process		
Bio-Step Sludge lbs./Day (D.A.F. Thickened)	33,360	48,883
Primary Sludge lbs./Day	57,452	86,178
Scum lbs./Day	8,000	8,000
Total lbs./Day	98,812	143,061
Volatile Solids lbs./Day	72,133	104,435
Reduction Vol. Solids lbs./Day [redacted]	36,067	52,218
Aerobic Process		
Gravity Thickened Sludge lbs./Day	33,360	48,833
Volatile Solids lbs./Day	24,353	35,685
Reduction Vol. Solids lbs./Day [redacted]	10,715	15,701
Total Sludge Solids lbs./Day	132,172	191,944
Total Reduction Vol. Sol. lbs./Day	46,782	67,919
Total Digested Sludge Prod. lbs/Day	85,390	124,025

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Date	Design	Department	Sheet 6 of 13
	Check	Job Description	Project No

GAS PRODUCTION

2 new only

	An. Avg.	Max. Month
Anaerobic Process		
Bio-Step Sludge lbs./Day (D.A.F Thickened)	33,360	48,883
Volatile Solids lbs./Day	24,353	35,685
Reduction Vol. Solids lbs./Day Assume 50%	12,177	17,843
Sludge Gas Production 15 CF/lb. Vol. Sol. - 1000 CF/Day	183	268
Eng. Generator Consumpt. - 1000 CF/Day 500 KW - S.M. No. 10 - Fig. 25	246	246
Percent Capacity % @ Full Load	74	109
Electrical Power Prod. KW	325	500

Date	Design	Department	Sheet 7 Of 13
	Check	Job Description	Project No

ENERGY PRODUCTION AND SAVINGS

	AN. AVE.	MAX. MONTH
POWER PRODUCTION FROM ENGINE-GENERATOR	325 KW	500 KW
TECO POWER DEMAND MONTHLY CHARGE (KW x $5.00/KW)	$1625	$2500
YEARLY POWER CHARGE (KW x 24 HR x 365 DAY x $0.0513/KWH)	$146,050	$224700
YEARLY DEMAND CHARGE MONTHLY CHARGE x 12 MONTHS	$ 19,500	$ 30,000
TOTAL TECO POWER SAVINGS	$165,500	$254,700

AEROBIC DIGESTOR POWER SAVINGS

CURRENT HORSEPOWER REQUIRED	1070
MAX. HORSEPOWER BASED ON NEW LOADING	780
HORSEPOWER DIFFERENCE	290
POWER REQUIRED FOR 290 HP (290 HP x .746 x .8 PF) KW	172
TECO POWER DEMAND MONTHLY CHARGE (KW x $5.00/KW)	$ 860
YEARLY DEMAND CHARGE	$ 10,320
YEARLY POWER CHARGE (KW x 24 HR x 365 DAY x $0.0513)	$ 77,290
TOTAL TECO POWER SAVINGS	$ 87,610

Department		Sheet 8 of 13
Job Description	Project No.	

EPA PROPOSAL
EAC COST

ITEM	DESCRIPTION	COST CALCULATION	ANNUAL O&M $1000
1.	NEW PRIMARY TANKS		
	a. 4 NEW TANKS	$3,132,000 x 3.0%/YR	94.0
	b. 72" INF/EFF CONDUIT	$800,000 x 1.0%/YR	8.0
2.	MISC & SITE WORK FOR PRIMARY TANKS	$786,000 x 1.0%/YR	7.9
3.	REHAB 5 EXISTING ANAEROBIC DIGESTORS	$2,477,000 x 3.0%/YR	74.3
4.	REPLACEMENT ENG-GEN 2 UNITS		
	a. NEW ENG-GEN SETS	$650,000 x 5.0%/YR	32.5
	b. NEW SWITCHGEAR FOUND.	$75,000 x 1.0%/YR	0.8
	c. NEW OUT. SWITCHGEAR	$175,000 x 3.0%/YR	5.3
	d. TRANSFORMER STATION	$40,000 x 1.0%/YR	0.4
	e. HEAT RECOVERY SYSTEM	$120,000 x 3.0%/YR	3.6
	f. ADD. TO SWITCHGEAR	$60,000 x 1.0%/YR	0.6
	g. MISC. & SITE WORK	$244,000 x 1.0%/YR	2.4
5.	31 NEW SLUDGE DRYING BEDS	$7,161,000 x 3.0%/YR	214.8
6.	MISC & SITE WORK FOR DRYING BEDS	$716,000 x 3.0%/YR.	21.5
7.	NEW FILTER PRESS FACILITY		
	a. BUILDING	$1,257,000 x 3.0%/YR	37.7
	b. FILTER PRESSES	$572,000 x 5.0%/YR	28.6
	c. MISC. & SITE WORK	$286,000 x 1.0%/YR	2.9
8.	POLYMER - DRYING BEDS	425,810 #/YR x $0.10/#	42.6
9.	POLYMER - FILTER PRESS	444,340 #/YR x $0.10/#	44.4
		TOTAL ANNUAL O&M	622.3

$$\text{COMPARATIVE EAC} = \frac{21{,}537-0}{10.6977} + 622.3$$

EAC = 2635.5

...ment		Sheet 7 of 13
Description	Project No	

EPA PROPOSAL
CAPITAL COST

ITEM	DESCRIPTION	COST CALCULATION	CAPITAL COST $1000
1.	NEW PRIMARY TANKS		
	a. 4 EA NEW TANKS	25,669 SF x $122.00/SF	$ 3,132
	b. 72" INF/EFF CONDUITS	2000 FT x $400.00/FT	800
2.	MISC. & SITE WORK FOR PRIMARY TANKS	$3,932,000 x 20%	786
3.	REHAB 5 EXISTING ANAEROBIC DIGESTORS	SEE APPENDIX B-5, SM No 10	2,477
4.	REPLACEMENT ENG-GEN 2 UNITS	SEE APPENDIX B-2, SM No 10	1,464
5.	31 NEW SL. DRYING BEDS	511,500 SF. x [redacted]	7,161
		9.00	4,603.5
6.	MISC & SITE WORK FOR DRYING BEDS	$7,161,000 x 10%	716
		$4,603,500 x 10%	460
7.	NEW FILTER PRESS FACILITY		
	a. NEW BUILDING	173,333 CF x $7.25/CF	1,257
	b. RELOCATE 3 EXISTING	3 EA x $10,000	30
	c. 1 NEW FILTER PRESS	1 EA x $110,000	110
	d. INSTALL NEW PRESS	$110,000 x 30%	33
8.	MISC & SITE WORK FOR FILTER PRESS	$1,430,000 x 20%	286
		TOTAL EST. CONST. COST	$ 18,252
		18% SERVICE & INTEREST	3,285
		TOTAL EST PROJECT COST	$21,537

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Date	By	Department Job Description	Sheet 2 of 3 Project No.

MODIFIED EPA PROPOSAL
ENG COST

ITEM	DESCRIPTION	COST CALCULATION	ANNUAL O & M $1000
1.	NEW PRIMARY TANKS	SEE ITEM 1, EPA PROPOSAL	$ 102.0 ✓
2.	MISC & SITE WORK FOR PRIMARY TANKS	SEE ITEM 2, EPA PROPOSAL	7.9 ✓
3.	REHAB 5 EXISTING ANAEROBIC DIGESTORS	SEE ITEM 3, EPA PROPOSAL	74.3 ✓
4.	REPLACEMENT ENG - GEN 2 UNITS	SEE ITEM 4, EPA PROPOSAL	45.6 ✓
5.	10 NEW DRYING BEDS	$1,464,000 x 3.0%/YR	43.9
6.	MISC. & SITE WORK FOR DRYING BEDS	$ 149,000 x 3.0%/YR	4.8
7.	NEW FILTER PRESS FACILITY		
	a. BUILDING	$ 1,257,000 x 3.0%/YR	37.7
	b. FILTER PRESS	$ 715,000 x 5.0%/YR	35.8
	c. MISC. & SITE WORK	$ 315,000 x 1.0%/YR	3.2
8.	NEW DAF THICKENERS		
	a. STRUCTURE & EQUIP.	$ 940,000 x 3.0%/YR	28.2
	b. AUXILIARY BUILDING	$ 200,000 x 1.0%/YR	2.0
9.	MISC. & SITE WORK FOR DAF THICKENERS	$ 228,000 x 1.0%/YR	2.3
10.	NEW ANAEROBIC DIGESTORS		
	a. STRUCTURE & EQUIP.	$ 3,164,000 x 3.0%/YR	94.9
	b. AUXILLARY BUILDING	$ 435,000 x 1.0%/YR	4.4
	c. COMPRESSOR BUILDING	$ 90,000 x 1.0%/YR	0.9
11.	MISC & SITE WORK FOR ANAEROBIC DIGESTORS	$ 738,000 x 1.0%	7.4

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Sheet [illegible] of 13

Description

Project No.

ITEM	DESCRIPTION	COST CALCULATION	ANNUAL O&M \$1000
12.	NEW ENG.-GEN FACILITY		
	a. NEW BUILDING	\$520,000 × 3.0%/YR	15.6
	b. NEW ENG.-GEN SET	\$250,000 × 5.0%/YR	12.5
	c. INSTALL NEW SET	\$75,000 × 5.0%/YR	3.8
	d. HEAT RECOVERY EQUIP. SYSTEM	\$60,000 × 3.0%/YR	1.8
	e. ADD. OUTDOOR SWITCH.	\$35,000 × 3.0%/YR	1.1
13.	MISC.: SITE WORK FOR ENG-GEN	\$47,000 × 1.0%/YR	0.5
14.	POLYMER - DRYING BEDS	285,180 #/YR × \$0.10/#	28.5
15.	POLYMER - FILTER PRESS	966,640 #/YR × \$0.10/#	96.6
		SUBTOTAL ANNUAL O&M	\$655.7
16.	INCREMENTAL POWER PRODUCTION SAVINGS		
	a. POWER GENERATED	325 KW × 24 HR × 365 DAY × \$0.0513/KW	\$(146.1)
	b. POWER DEMAND	325 KW × 12 MONTH × \$5.00/KW/MONTH	(19.5)
17.	OPTIMUM LOAD ON AEROBIC DIGESTORS		
	a. POWER	172 KW × 24 HR × 365 DAY × \$0.513/KW	(77.3)
	b. POWER DEMAND	172 KW × 12 MONTH × \$5.00/KW/MONTH	(10.3)
		TOTAL ANNUAL O&M	\$402.5

COMPARATIVE EAC = $\frac{22,376-0}{10.6977} + 402.5$

EAC = \$2494.2

2594.2

MODIFIED EPA PROPOSAL
CAPITAL COST

ITEM	DESCRIPTION	COST CALCULATION	CAPITAL COST $1000
1	NEW PRIMARY TANKS	SEE ITEM 1, EPA PROPOSAL	$ 3,932
2	MISC. SITE WORK FOR PRIMARY TANKS	SEE ITEM 2, EPA PROPOSAL	786
3.	REHAB 5 EXISTING ANAEROBIC DIGESTORS	SEE ITEM 3, EPA PROPOSAL	2,477
4.	REPLACEMENT ENG.-GEN 2 UNITS	SEE ITEM 4, EPA PROPOSAL	1,464
5.	10 NEW DRYING BEDS	165,000 [redacted] 14^{00}	1,485 2,310
6.	MISC. & SITE WORK FOR DRYING BEDS	1,485,000 x 10% 2,310,000 x 10%	149 231
7.	NEW FILTER PRESS FACILITY		
	a. NEW BLDG	173,333 CF x $7.25/CF	1,257
	b. RELOCATE EXISTING 3	3 EA x $10,000	30
	c. 2 NEW FILTER PRESS	2 EA x $110,000	220
	d. INSTALL NEW PRESSES	$220,000 x 30%	66
	e. SITE WORK & MISC.	$1,573,000 x 20%	315
8.	NEW DAF THICKENERS		
	a. STRUCTURE & EQUIP.	3132 SF x $300/SF ✓	940
	b. AUXILIARY BLDG.	40,000 SF x $5.00/SF	200
9.	MISC & SITE WORK FOR DAF THICKENERS	$1,140,000 x 20%	228
10.	NEW ANAEROBIC DIGESTORS		
	a. STRUCTURE & EQUIP.	435,771 CF x $7.26/CF	3,164
	b. AUXILIARY BLDG.	60,000 CF x $7.25/CF	435
	c. COMPRESSOR BLDG.	30,133 CF x $3.00/CF	90
11.	MISC & SITE WORK FOR ANAEROBIC DIGESTORS	$3,689,000 x 20%	738

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of 13

[illegible] - CONTINUED

ITEM	DESCRIPTION	COST CALCULATION	CAPITAL COST $1000
12.	NEW ENG-GEN FACILITY		
	a. NEW BLDG.	65,000 CF x $8.00/CF	520
	b. NEW ENG.-GEN SET	1 EA x $250,000	250
	c. INSTALL NEW SET	$250,000 x 30%	75
	d. HEAT RECOVERY EQUIP. SYSTEM	1 EA x $60,000	60
	e. ADD. OUTDOOR SWITCH.	1 EA x $35,000	35
13.	MISC & SITE WORK FOR ENG-GEN	$940,000 x 5%	47
		TOTAL EST. CONST. COST	$ 18,963
		18% SERVICE & INTEREST	3,413
		TOTAL EST. PROJECT COST	$ 22,376
		w/o previously funded	12,159
		-2 drying beds	- 416
			11,743